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Atlanta, Georgia 30310-1495

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This report chronicles activities of the Minority Health Professions Foundation's tenth Symposium on Career Opportunities in Biomedical and Public Health Sciences. The Symposium was held in Los Angeles, California, April 3-5, 1996, with thirteen hundred thirty-two (1332) minority students in attendance. The Symposium was designed to influence minority students to pursue a career in a biomedical or public health science.

Students were treated to plenary speakers and workshop speakers who conducted ninety-seven career workshops. They also were treated to forty-one exhibits. Nineteen student participants presented research posters.

All students received 100% fiscal support to attend the Symposium.

Preliminary results of evaluation instruments revealed that many students were influenced to pursue a biomedical or public health science.

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FOREWORD

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William W. Fuller 7-19-96

PI - Signature Date

TABLE OF CONTENTS

INTRODUCTION

The Association of Minority Health Professions Schools (AMHPS) and the Minority Health Profession Foundation (MHPF) have conducted ten efforts entitled "Symposium on Career Opportunities in Biomedical and Public Health Sciences" since 1987. The tenth Symposium was held at the Century Plaza Hotel, Los Angeles, California, April 3-5, 1996.

Previous symposia have attracted from eight hundred and fifty (850) to fourteen hundred and fifty (1450) high school and college students from across the nation. Each year, forty-five (45) to sixty-six (66) exhibitors present displays and twenty-five (25) to forty (40) minority biomedical scientists serve as role models for the students.

The goal of the Symposium is to encourage minority collegiate freshmen and sophomores and junior and senior high school students to pursue careers in biomedical and public health sciences. The specific objectives of the Symposium are to:

- Provide information to students and science advisors concerning biomedical and public health science careers in government, academe and industry.

- Provide information to students and science advisors about training activities necessary to pursue biomedical or public health science careers and the fiscal support which one can obtain for such activities.

- Familiarize students and science advisors with various research projects conducted by other collegiate and/or high school students.

- Discuss the structure and mechanics of science advisement for the benefit of high school counselors, science teachers and others.

- Provide opportunities for participants to interact with outstanding minority science role models.

Minorities (African-Americans, Hispanics, Native-Americans and Pacific-Islanders) are vastly underrepresented in the biomedical and public health sciences. Only a few pursue doctoral degrees in various biosciences each year. The situation is even more striking when one reviews disciplines which minorities pursue in the biomedical and public health sciences. For example, there are approximately twelve (12) African-Americans with a

Ph.D. in Biochemistry in all of the medical schools in the United States. The majority of these are located at Howard University, Meharry Medical College and Morehouse School of Medicine.

Data for African-Americans, Hispanics and Native-American recipients of doctoral degrees in selected sciences are given below. Five thousand, five hundred and twenty-seven (5,527) science doctorates were awarded in 1993 in Chemistry, Physics and Biology.

TABLE I

Ethnic Group	Chemistry	Physics	Biology
African-American	19	9	63
Hispanic	45	22	93
Native-American	2	3	14
	66	34	170
Total for all groups	1,272	810	3,445

Source: Doctoral Recipients, page 23, National Academy of Sciences from United States Universities: 1995, National Academy of Sciences, Page 23.

The number of physicians seeking research careers has been widely reported to be alarming small and the subset of minority physicians within this group barely exists.

Based on the information above, it is the intent of MHPF to increase the pipeline by informing minority students of the spectrum of careers available in the biomedical and public health sciences. The implementation of the Symposium is an attempt to familiarize students with training pathways which lead to such careers.

Body

Recruitment of Students

Symposium staff invited liaison persons from member institutions of the Association of Minority Health Professions Schools and high school counselors, principals and science teachers to nominate potential participants. Participants were obtained from: Detroit, Nashville, Dallas, Houston, Los Angeles, Seattle, Spokane, Baltimore, Washington, Atlanta, Indianapolis, Washington, D.C., New Orleans,

Tallahassee, Montgomery County (Maryland), Jersey City, Newark, St. Marie (Idaho), Montgomery and Tuskegee. The selection criteria included: a grade-point average of 3.0 or better; two (2) letters of recommendation from current teachers; submission of a completed application form, and the development of a three hundred (300) word or less essay which reveals why the participant wishes to attend or why he/she intends to pursue a biomedical or public health career.

College students were selected from Atlanta, Jersey City, Nashville, Tuskegee, New Orleans, Los Angeles, Houston, Washington, D.C., and Tallahassee.

In addition to the above sites, invitations were sent to all NIH training programs, MBRS Programs, RCMI Programs, Historically Black Colleges and Universities and institutions with significant populations of Native-Americans and Hispanics.

Recruitment of Speakers

An array of outstanding and noted achievers was identified from groups of African-American, Hispanic, and Native-American scientists. All speakers are known via national and/or international groups. Plenary speakers included:

- Reed Tuckson, M.D.
  Charles Drew University of Medicine and Science

- Joseph Harris, M.D.
  Charles Drew University of Medicine and Science

- Rueben Warren, D.D.S., Dr. P.H.
  Centers for Disease Control and Prevention

- Yvonne Freeman, Ph.D.
  Clark Atlanta University

- Kathy Sanders-Phillips, Ph.D.
  Charles Dew University of Medicine and Science

- Harold Davis, DVM
  AMGEN, Inc.

- Benjamin Carson, M.D.
  Johns Hopkins University

- Franklyn Prendergast, Ph.D.
  Mayo Caner Center

- Eloy Rodriguez, Ph.D.
  Cornell University

- Charles Finch, M.D.
  Morehouse School of Medicine

Workshop speakers included:

- Carcy Chan, Ph.D.
  East Los Angeles Community College

- Moses Williams, Ph.D.
  Temple University

- Tyrone Felder, Ph.D.
  Meharry Medical College

- Sandra Burke, Ph.D.
  Abbott Laboratories

- Doris Jackson, Pharm.D.
  Texas Southern University

- Morris Clarke, Ph.D.
  Burroughs-Wellcome Company

- Horace Williams, Ph.D.
  University of Southern California

- Robert Davis, DVM
  National Zoological Park

- John Scriven, Ph.D.
  Florida A&M University

- Ezra Davidson, M.D.
  Charles Drew University of Medicine and Science

- Marjorie Smith, M.D.
  Morehouse School of Medicine

- Ben Muneta, M.D.
  Private Practitioner

- James Wyche, Ph.D.
  Brown University

- Consuelo Beck-Sague, M.D.
  Centers for Disease Control and Prevention

- Clifford Johnson, DVM
  Department of Defense

- Alfred Dorsey, DVM
  Centers for Disease Control and Prevention

- John Martin, Ph.D.
  Exxon Biomedical Research

- Dora Menchaca, Ph.D.
  AMGEN, Inc.

- James Tyus, D.D.S.
  Meharry Medical College

- Joseph McQuirter, D.D.S.
  Charles Drew University of Medicine and Science

- Bryant Moore, Ph.D.
  Ortho Diagnostic Systems

- Henry Moses, Ph.D.
  Meharry Medical College

- Richard Ochillo, Ph.D.
  Xavier University

- Samuel Shacks, M.D., Ph.D.
  Charles Drew University of Medicine and Science

- Minnie Baylor Henry, Esquire
  Food and Drug Administration

- Earl Long, Ph.D.
  Centers for Disease Control and Prevention

- Robert Dottin, Ph.D.
  Hunter College

- Gary Quigley, Ph.D.
  Hunter College

- Billy J. Softly, Ph.D.
  Nabisco Food Group, Inc.

Logistics

The Symposium site was the Century Plaza Hotel, Los Angeles, California. Hotel rooms were obtained at one-hundred dollars ($100.00) for single or double accommodations. Most of the hotel's meeting rooms were utilized.

Brock Tours and Travel, Decatur, Georgia, served as the consultant firm for logistics. The firm was responsible for negotiating and recommending hotel room rates, airline travel rates, food and beverage arrangements, hotel amenities, hotel check-in and check-out procedures for participants, bus transportation, transcription of sessions, basic exhibit space rates and entertainment. Freeman Decorator served as the expositioner.

All out of town students were flown to Los Angeles. Local students were transported by bus each day to and from the Symposium site.

Organization

Dr. Sullivan and his staff provided on-site logistical support for all Symposium activities. He was responsible for the complete oversight of all Symposium activities and direction. He was assisted in his efforts by members of his staff which included: Dr. Roy Hunter, Ms. Rheba Walton, Ms. Betty Willingham, Ms. Donna Florence, Mr. Waverly McMichael, Ms. Cynthia Pierce, Ms. Beatrice Raiford, Mr. Donald Williams, Ms. Andrea Fox, Mr.Lonnie Merritt and Ms. Joyce Cray.

A Symposium Planning Committee was very active in planning for the Symposium. The Committee was represented by each member institution of the Association of Minority Health Professions Schools. The members of the committee were: Dr. Fred Jones, Meharry Medical College; Ms. Mary Quash, Drew University of Medicine and Science; Mr. Carlton Bailey, Florida A.&M. University; Ms. Lajoy Kay, Texas Southern University; Dr. Hyacinth Findlay, Tuskegee University; Ms. Regina Redmond, Xavier University; Dr. Samuel Shacks, Charles Drew University of Medicine and Science; Ms. Audrey Vaughan, Howard University, and Dr. Walter W. Sullivan, Morehouse School of Medicine. The Committee provided assistance to the Symposium Director for overall planning and developed policy matters related to the Symposium.

Exhibits

Forty-one (41) organizations displayed exhibits at the Symposium. The exhibitors included:

- AMGEN, Inc.
- Bristol-Myers Squibb Company
- Charles R. Drew University of Medicine and Science
- DuPont Merck Pharmaceutical Company
- Exxon Biomedical Sciences, Inc.
- Florida A&M University College of Pharmacy
- Florida A&M University College of Pharmacy - Space Life Sciences Training Program
- Food and Drug Administrator
- Hunter College
- Mayo Medical and Graduate Schools
- Meharry Medical College

- Minority Health Professions Foundation
- Morehouse School of Medicine
- National Heart, Lung, and Blood Institute
- National Institute for Occupational Safety and Health
- National Institute on Deafness and Other Communications Disorders
- National Institute of Dental Research
- National Institute on Drug Abuse
- National Institutes on Health - Division of Research Grants
- National Institutes of Health - Gerontology Research Center
- National Institutes of Health - Office of Science Education
- National Library of Medicine
- National Cancer Institute - Equal Employment Office
- New York University School of Medicine
- National Institute of Diabetes, Digestive and Kidney Diseases
- Organ and Tissue Donation Consortium
- Texas Southern University
- The Association of American Veterinary Medical Colleges
- Centers for Disease Control and Prevention
- The Endocrine Society
- Tuskegee University School of Veterinary Medicine
- UCLA Access Program
- UCLA School of Medicine
- University of Iowa
- University of Michigan
- University of Oregon
- University of Pennsylvania
- University of Virginia
- University of Wisconsin-Madison
- Visiting Scholars in Residence Program
- Xavier University of Louisiana

The Exhibitors displayed activities of their biomedical and/or public health research. Some of these featured minorities. The displays augmented efforts of various Symposium speakers. The exhibitors were composed of biomedical and public health firms as well as educational institutions and governmental agencies.

Sponsors

The following organizations provided support for the symposium:

- National Institutes of Health (This included the National Institute of General Medical Sciences which served as the overall source of funds from the NIH.)
- AMGEN, Inc.
- Bristol-Myers Squibb Company
- Centers for Disease Control and Prevention
- National Institute on Drug Abuse
- Food and Drug Administration
- Exxon Corporation and Exxon Biomedical Sciences, Inc.
- Eli Lilly
- Janssen Pharmaceuticals
- California Wellness Foundation
- The Prudential Foundation
- Ortho Diagnostics Systems, Inc.
- U.S. Army Medical Research

Symposium Program

The Symposium consisted of five (5) plenary sessions, two (2) luncheon sessions and ninety-four (94) workshops. The workshop topics included:

- Careers in Dentistry (Academic and Practice)
- Careers in Medicine (Academic and Practice)
- Careers in Public Health Research
- Research Presentations
- Careers in Veterinary Medicine
- Careers in the Pharmaceutical Sciences
- Careers in Chemistry
- Careers in Biomedical Research
- Careers in Academe
- Scholarships and Fellowships and Assistantships
- Computers in Biomedical Research
- Career Pathways to Biomedical and Public Health Sciences
- Careers in Pharmacy (Academic and Practice)
- Careers in Industry

All speakers were well received by those in attendance.

Research Posters

Nineteen (19) research posters were prepared and presented by high school and college students. A list of each poster title and author is given below.

EVIDENCE OF COILED-COIL STRUCTURE OF A SYNTHETIC PEPTIDE DERIVED FROM THE HUMAN IMMUNODEFICIENCY VIRUS GLYCOPROTEIN 41 000. Craig Brown, L. Gordon, A. Waring. Department of Pediatrics, Charles R. Drew University of Medicine and Science, Los Angeles, CA 90059 and UCLA Center for Molecular and Medical Sciences, Los Angeles, CA 90024.

IN VITRO EFFECTS OF SICKLE CELL DISEASE SERUM ON NORMAL LYMPHOCYTE RESPONSE TO PHYTOHEMAGGLUTININ. Colaco, V. Taylor, S.C., Shacks, S.J., Ou, Z., Charles R. Drew University of Medicine and Science, Los Angeles, California.

THE ROLE OF DIETARY SODIUM AND CHLORIDE ON MEAN BLOOD PRESSURE IN HYPERTENSIVE DOGS. Dixon, L. M.[a], Webster, J.E.[a] and Tippet, F. E.[b], [a] Department of Physiology, Pharmacology and Toxicology, School of Veterinary Medicine, Tuskegee University, Tuskegee, AL, U.S.A., and [b]Department of Pathology and Parasitology, School of Veterinary Medicine, Tuskegee University, Tuskegee, AL, U.S. A.

DEVELOPMENT OF RETINOID CYCLING COMPONENTS IN EMBRYONIC OCTOPUS PHOTORECEPTORS. L. Fareed and L.K. Robles, California State University, Dominquez Hills, Carson, CA 90747.

THE CONFORMATIONS OF A VIRAL FUSION PEPTIDE M MEMBRANE-MIMIC ENVIRONMENTS, Fiotildes. K.F., Waring, A.J., Gordon, L.M. Charles R. Drew University of Medicine & Science, Los Angeles, CA.

SUBMICROSCOPIC DELETIONS OF Y CHROMOSOME LONG ARM ARE NOT UNIQUE TO AZOOSPERMIC MEN, BUT ARE PREVALENT EVEN M OLIGOZOOSPERMIC MEN. H. Najmabadi, I. Sinha-Hikim, D.M. DeKrester, H. W. G. Baker, R.I. McLachlan, C. Mallides, K. Loveland, M. Gutierrez, Arlene L. Martinet, F. Ziel, L.G. Ramirez, A.G. Nieva, M. Oh, W. Taylor, S. Arver, S. Bhasin. Charles R Drew University of Medicine and Science, Los Angeles, CA; Institute of Reproduction and Development, Monash University, Melboume, Australia.

COMPARISONS OF PROTEIN FACTORS IN MUSCLE AND NON-MUSCLE CELL TYPES THAT MAY REGULATE ALTERNATIVE RNA SPLICING. Emmitt R. Jolly, Tuskegee University. Senior, Department of Biology, and Dr. David Helfman, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.

THE EFFECTS OF ENDOTHELIAL CELL (EC) CONDITIONED MEDIA ON SMOOTH MUSCLE CELL (SMC) PROLIFERATION AND MIGRATION. LaKesha Y. Lawrence, Ricardo A. Rivers, and Sandra Harris-Hooker, Ph.D. Morehouse School of Medicine, Atlanta, GA, 30310.

THE EFFECT OF PSYCHOLOGICAL STRESS ON THE CARDIOVASCULAR PHYSIOLOGY OF PREGNANT GUINEA PIGS. Henry Liu, Joann Liu & James Henry, Charles R. Drew University Of Medicine and Science, Los Angeles, CA 90059.

CARDIOVASCULAR FUNCTION DURING PREGNANCY, PARTURITION AND LACTATION IN RATS, Nakia Manor, Joann Liu & James Henry, Charles R. Drew University of Medicine and Science, Los Angeles, CA 90059.

INTERACTIONS BETWEEN ANTI-HIV NUCLEOSIDES AT THE RENAL LEVEL. Moore, Angela, Enigbokan, M. A., Thompson, J. 0., and Amueneke, D. C. College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX 77004.

EFFECTS OF PINACIDIL ON CAFFEINE AND NICKEL INDUCED PERTURBATIONS IN MEMBRANE POTENTIAL. Kawonia P. Mull. Shukla Sarker and M.L. Bhattacharwa. Dept. of Physiology, Meharry Medical College, Nashville, TN. 37208.

SYNTHESIS OF SOME N-(SUBSTITUTED PHENYLCARBONYLAMINO)- 3-CARBOETHOXYMETHYL- 1,2,3,6, TETRAHYDROPYRIDINES. U. C. Onubogu. T. Wilson, C. Okoro, K. Yoon S. Williams, Z. Johnson and Kinfe K. Redda *.

THE INVOLVEMENT OF c-FES, RAF-1, MAP KINASE, SHC AND GRB2 IN THE SIGNALING MECHANISM OF IL-8 IN HUMAN MONOCYTES. Pearson, L.L. and Adunyah, S.E., Meharry Medical College, Nashville, TN.

CHARACTERIZATION OF THE UNIQUE PEPN ALLELE PRESENT IN THE LATIN AMERICAN CLONE OF *VIBRIO CHOLERA* 01. Juliet M. Small and Patricia I. Fields. Texas Southern University, College of Pharmacy and Health Sciences, Houston, TX and Centers for Disease Control and Prevention, Atlanta, GA.

NOOTROPIC COMPOUND ANIRACETAM ALTER RECONSTITUTED AMPA CHANNEL ACTIVITY. David Ware, Graduate Student, Tuskegee University, Department of Biology, Xenoria Causey, Lauren McCall, Solomon Yilma and Dr. Vishnu Suppiramaniam, Department of Biology, Tuskegee University, Tuskegee, AL.

INVIVO TYPE 1 AND 2 CYTOKINE PRODUCTION IN SICKLE CELL DISEASE PATIENTS DURING THE STEADY STATE. Wiley, P., Taylor, S.C., Shacks, S.J., Ou, Z., Department of Pediatrics, Charles R. Drew University of Medicine and Science, Los Angeles, CA.

MOLECULAR CHARACTERIZATION OF CAPRINE ADENOVIRUS. Williams, E.L. [a], Kleiboeker, S.B.[b], Reddy, P.G.[a], Clouser, D.F.[b], and Lehmukl, H.D.[b], [a]Department of Microbiology, School of Veterinary Medicine, Tuskegee University, Tuskegee,AL, U.S.A., and [b]National Animal Disease Center, USDA, Agricultural Research Service, Ames, Iowa, U.S.A.

PURIFICATION OF A PUTATIVE EGF RECEPTOR (EGFR)HOMOLOGUE FROM TRYPANOSOMA CR UZI AMASTIGOTES . Williams . K.L. , Temple, S.D., and Lima, M. F., Meharry Medical College, Nashville, TN.

Monetary awards for the best posters were provided. The following students were cited along with their monetary awards:

- Mr. Edward L. Williams, Montgomery, AL - $1,000.00
- Mr. Craig Brown, Torrence, CA - $1,000.00
- Mr. Kenneth L. Williams, Nashville, TN - $350.00
- Mr. Corey N. Valdary, New Orleans, LA - $150.00

Students/Counselors

Thirteen hundred and thirty-two (1,332) students were in attendance along with fifty-one (51) counselors and ninety-five (95) exhibitors. The students were inquisitive, energetic and bright. They were enthusiastic in their praise for the Symposium content and speakers as evidenced via letters of thanks, oral statements and other comments.

The tracking of Symposium participants is an important phase of this project. An initial sample of one thousand (1000) previous attendees revealed that four hundred are in undergraduate science programs, fifty are in graduate science programs, four have received the Ph.D. degree and six have received the Doctor of Veterinary Medicine degree. We will sample another group over the next four months to ascertain their status.

Evaluation

Dr. Wiley Bolden is conducting a comprehensive evaluation of the effectiveness of the Symposium. His activities include:

- A pre-Symposium survey
- A post-Symposium survey
- Oral interviews during the Symposium
- Follow-up telephone conversations with students selected at random

Tabulation of data is underway. The final report will be completed in September 1996. The Symposium results, so far, indicate that many students have declared that they intend to pursue a biomedical or public health science career.

Conclusions

- Thirteen hundred and thirty-two (1332) academically talented students attended the Symposium. They were from various sections of the nation.

- Thirty-nine (39) outstanding minority biomedical and public health scientists served as role models and speakers.

- Nineteen (19) research posters were presented by participating students. Monetary awards ($150-1000) were made for the best four papers.

- Forty-one exhibitors displayed information on careers, their organizations and roles which minorities play in their groups.

- Fourteen (14) firms, governmental agencies and foundations provided funds for support of the Symposium.

- Ninety-seven (97) workshops were presented relative to various biomedical and public health science careers.

- All students were provided free transportation, meals and, in most cases, lodging for the period of the Symposium.

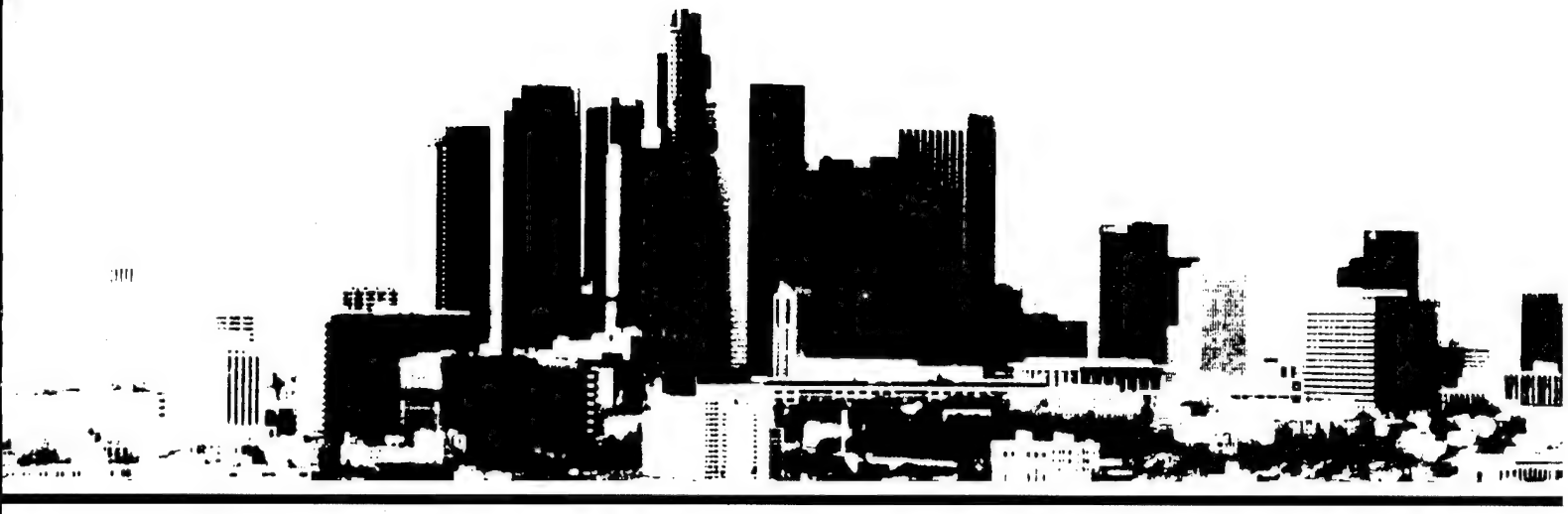
- Preliminary results of evaluation surveys indicate that may students plan to pursue a biomedical or public health science as a result of their participation.

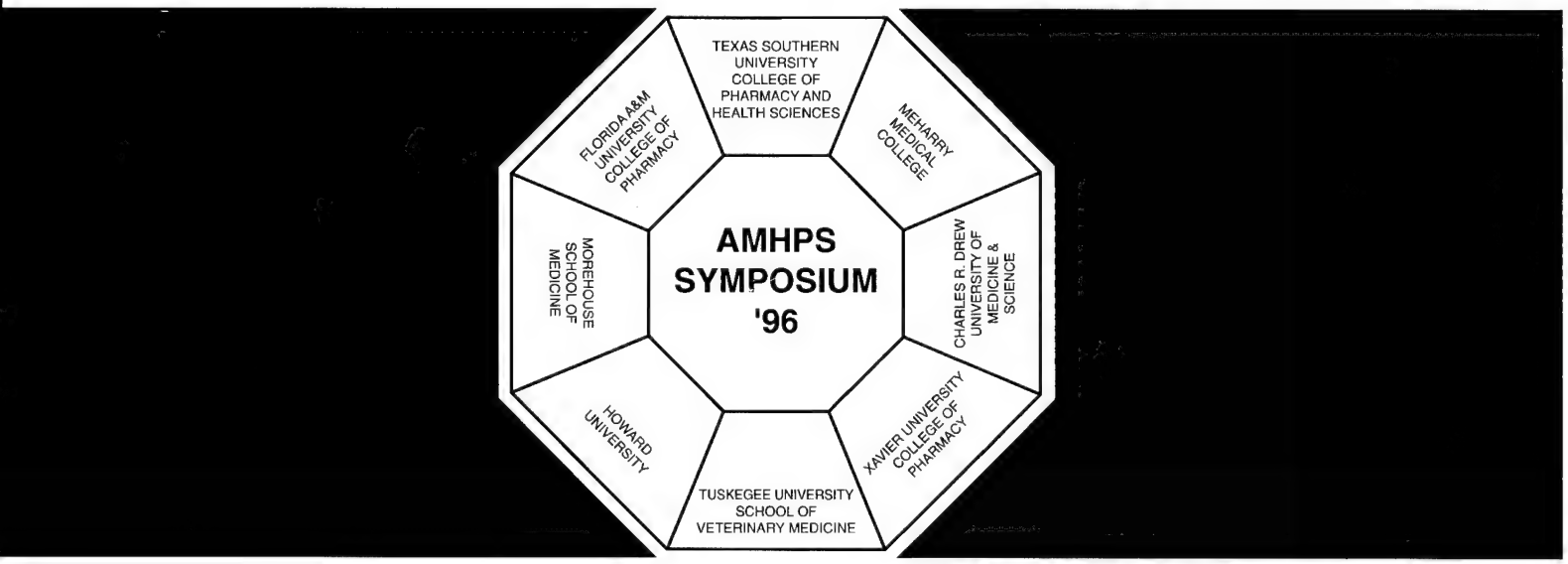
Bibliography

Salaried personnel - None.

A copy of the Symposium Program publication is attached.

APPENDIX





Tenth Annual Symposium on Career Opportunities in Biomedical & Public Health Sciences

April 3-6, 1996
Century Plaza Hotel
Los Angeles, California

Los Angeles Skyline by
Mr. Tom LaBonge

TABLE OF CONTENTS

MOREHOUSE SCHOOL OF MEDICINE

Office of Sponsored Programs

GREETINGS!!

Dear Students:

Welcome to the Tenth Symposium on Career Opportunities in Biomedical and Public Health Sciences. The Symposium is sponsored by the Association of Minority Health Professions Schools and the Minority Health Professions Foundation. Our host institution is the Charles Drew University of Medicine and Science.

You will have opportunities to spend the next two and one-half days with members of the Association and the Foundation as well as outstanding minority biomedical and public health scientists. You represent the very best among students of the nation's high schools and colleges. Thus, it is indeed an honor to have you associate with us during the Symposium.

We have prepared an excellent program for you. The program will allow you to hear and interact with persons who have succeeded in their professional endeavors. They are vital contributors to the advancement of the nation's scientific knowledge base. These persons have traversed the same paths which you are now traveling. They emanated from diverse backgrounds but have a common focus - excellence in biomedical and public health sciences. Although they may have experienced numerous challenges and barriers to success in the biomedical and public health sciences, they have succeeded in becoming the very best in their areas. We know that one day many of you will become outstanding scientists among the nation's leading academic and research scholars.

You are invited to seriously consider the possibility of becoming a biomedical or public health scientist because minorities are underrepresented in these areas. Because there are only a handful of minorities who receive doctorates in the biomedical and public health sciences each year, the Symposium is designed to increase the pipeline to such careers by making certain that you are aware of available opportunities.

We invite you to inform your high school or collegiate colleagues, as well as your teachers, about information learned at this Symposium. This is necessary because your words might do much to inspire others to become scientists.

Again, thank you for coming and I look forward to interacting with you.

Sincerely,

Walter W. Sullivan

Walter W. Sullivan, Ph.D.
Symposium Director

720 Westview Drive, S.W. Atlanta, Georgia 30310-1495 Telephone (404) 752-1610

SYMPOSIUM HISTORY

The Symposium on Career Opportunities in Biomedical and Public Health Sciences began as a component of a symposium presented by the Association of Minority Health Professions Schools (AMHPS) and the National Institutes of Health (NIH). This was a part of a combined celebration of the Centennial anniversaries of the Meharry School of Dentistry and the NIH in April 1987. Two hundred and forty-five (245) high school and collegiate students were among the participants.

The students interacted with and impressed internationally and nationally renown scientists, especially representatives of the NIH. Mr. Elward Bynum, NIH, encouraged representatives of AMHPS to continue the involvement of students in a symposium which would help to increase the numbers of minorities in the biomedical and public health sciences pipelines.

AMHPS submitted a proposal to NIH and received a grant of forty-one thousand-five hundred dollars ($41,500) to stage the second Symposium which was held in Atlanta, Georgia. That event attracted nine hundred and twenty (920) students and forty-six (46) exhibitors.

Each year a member institution of AMHPS hosts the Symposium. The Symposium attracts an outstanding cadre of minority scientists who effectively interact with students to encourage academic excellence and to influence some to become biomedical or public health scientists.

An impressive array of donors has been assembled to provide an unparalleled amount of financial support to enable students to attend at no cost. The list of donors includes representatives of industries, government and pharmaceutical firms.

The enthusiasm generated among students and speakers has been high. Many students, as gleaned via a tracking mechanism, have indicated that they are pursuing or intend to pursue studies in the biomedical and public health sciences and were influenced to do so as a result of Symposium activities. One former student has received a Ph.D. degree, two others the Doctor of Veterinary Medicine degree, several are in graduate school, and others are in college.

ASSOCIATION OF MINORITY HEALTH PROFESSIONS SCHOOLS

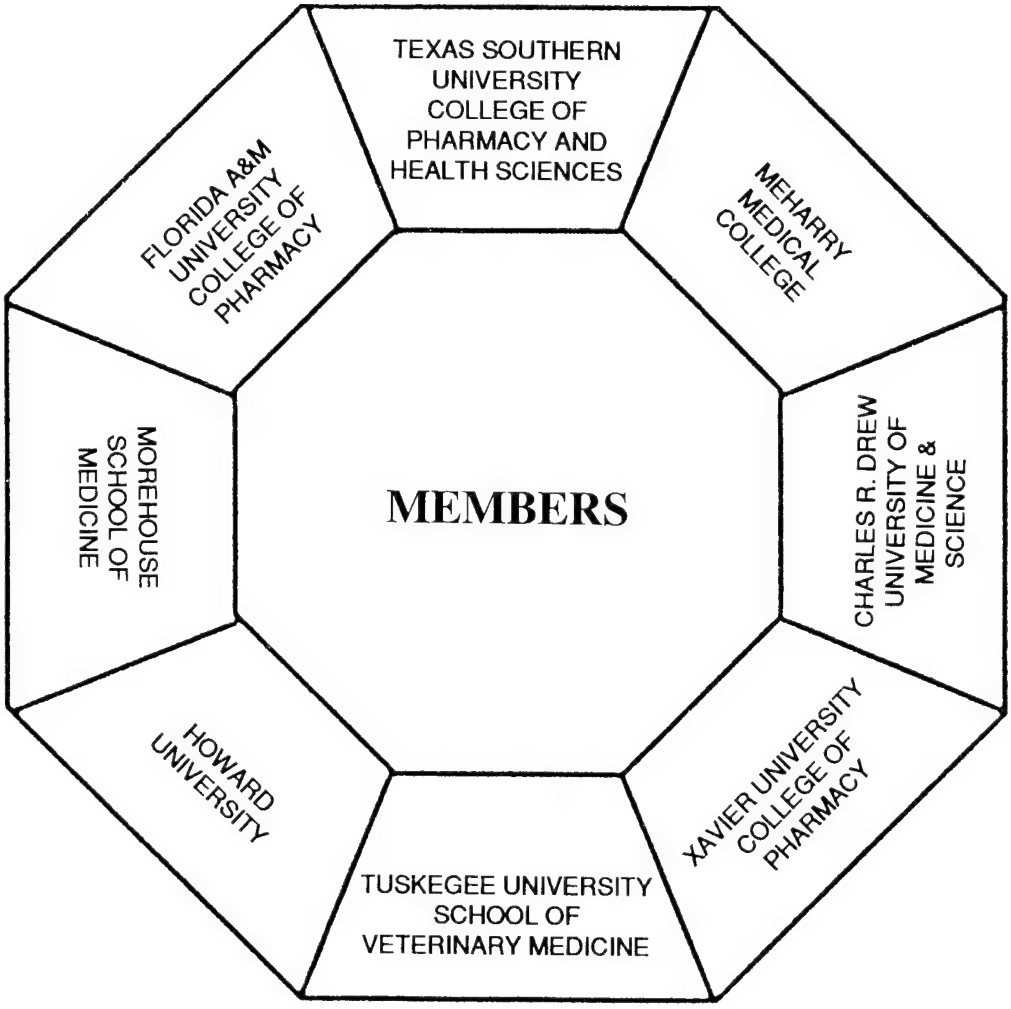
The Association of Minority Health Professions Schools is composed of the following institutions: Charles Drew University of Medicine and Science, Los Angeles, California; College of Pharmacy and Pharmaceutical Sciences, Florida A&M University, Tallahassee, Florida; Colleges of Dentistry, Medicine and Pharmacy, Howard University, Washington, D.C.; Schools of Dentistry and Medicine, Meharry Medical College, Nashville, Tennessee; Morehouse School of Medicine, Atlanta, Georgia; College of Pharmacy and Health Sciences, Texas Southern University, Houston, Texas; School of Veterinary Medicine, Tuskegee University, Tuskegee, Alabama; and School of Pharmacy, Xavier University, New Orleans, Louisiana.

The goals and objectives of the Association are to:

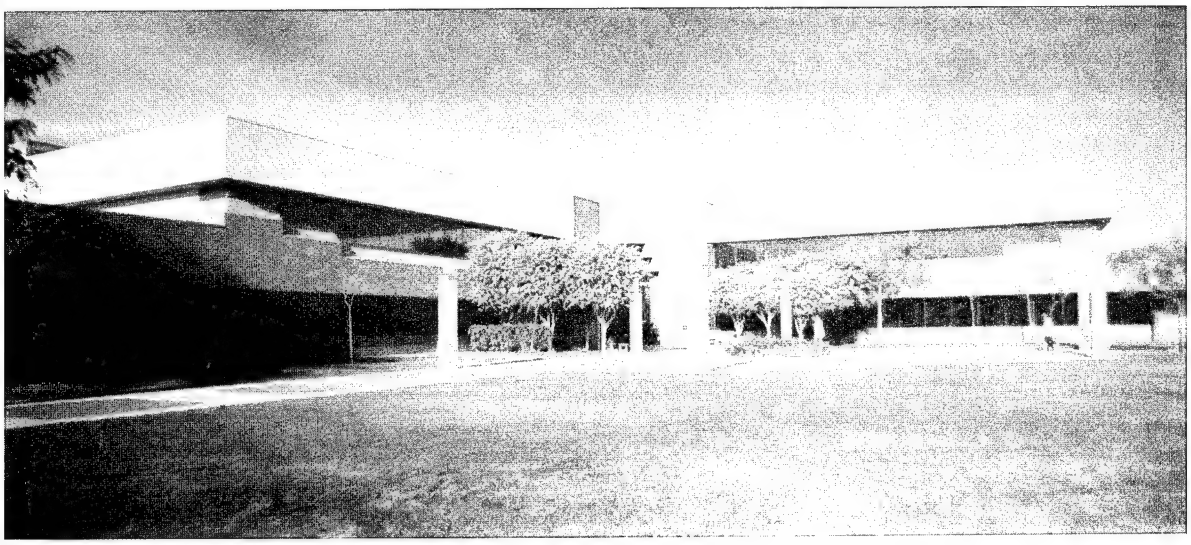
- Improve the health status of minority and disadvantaged persons.
- Expand the number of minority health professionals in medicine, dentistry, pharmacy, and veterinary medicine and expand services to underserved populations.
- Enable disadvantaged and minority students to become health professionals.
- Foster research on health problems of special importance to minority populations, health service utilization and delivery of health services for minorities and other underserved populations.
- Expand the numbers of minorities in faculty and leadership positions in health professions schools.
- Provide health services to minority and underserved populations in relationship to their educational and research missions.
- Strengthen and enhance the capabilities of minority schools to fulfill their educational and other missions.

MINORITY HEALTH PROFESSIONS FOUNDATION

The Minority Health Professions Foundation is the programmatic arm of the Association. The Foundation is a 501 C-3 organization. It receives and distributes funds to member institutions for academic, research and service activities.


MEMBERS
TEXAS SOUTHERN UNIVERSITY COLLEGE OF PHARMACY AND HEALTH SCIENCES
MEHARRY MEDICAL COLLEGE
CHARLES R. DREW UNIVERSITY OF MEDICINE & SCIENCE
XAVIER UNIVERSITY COLLEGE OF PHARMACY
TUSKEGEE UNIVERSITY SCHOOL OF VETERINARY MEDICINE
HOWARD UNIVERSITY
MOREHOUSE SCHOOL OF MEDICINE
FLORIDA A&M UNIVERSITY COLLEGE OF PHARMACY

CHARLES R. DREW UNIVERSITY OF MEDICINE AND SCIENCE



THE MISSION

As the only minority health science and technology center west of the Mississippi River, Charles R. Drew University of Medicine and science promotes multi-disciplinary institutional interest. The University pursues an organizing principle that embraces the needs and problems of society's least empowered minority and disadvantaged communities. The Drew Mission is "to conduct medical education and research in the context of service to a defined population and to train persons to provide care with competence and compassion to this and other underserved populations."

ORIGIN(S)

Drew University was incorporated in 1966 and, with the opening of its teaching hospital, the Martin Luther King, Jr., General Hospital in 1972, began offering postgraduate medical education for clinical scholars, research fellows, and residency training programs. Institutional education, patient care and research programs provide for student, staff and faculty development, in coordination with the medical need resident in the community. The collective impact of our mission statement is to breathe life into these interests.

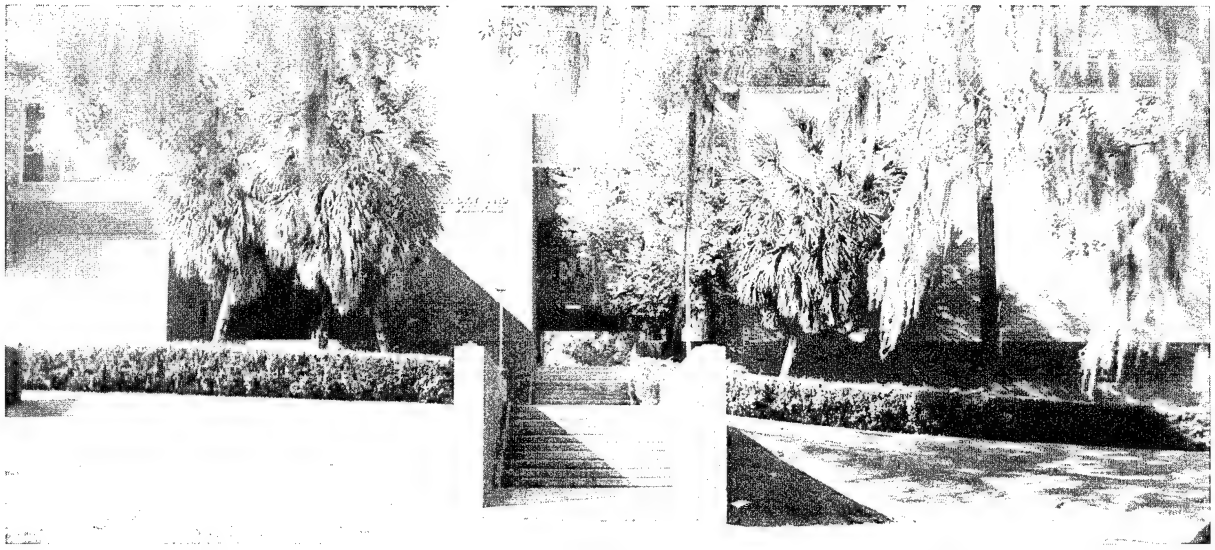
DREW'S EDUCATIONAL CONTINUUM

Currently, Drew programs span the depth and breadth of the educational continuum and life cycle. The very young are served through the Johnnie Tillmon Child Care Center and Project Headstart. The King-Drew Medical Magnet High School, now a decade old, offers secondary education. The College of Allied Health, home to one of the State of California's two longest lived Physician Assistance Programs, prepares students for entry level health careers leading to both Associate Arts and Baccalaureate degrees. The Drew/UCLA Medical Education Program provides training leading to the M.D. degree. There are 14 approved residency training programs that focus on primary care, which fuel basic science and specialty interests.

COLLABORATIVE INTELLECTUAL CAPITAL DEVELOPMENT

Drew programs of special importance to biomedical research and public health interest that have national co-sponsorship include: MARC, MBRS, MHSSRAP, RCMI, etc. There are five institutionally approved institutes and three such centers. The Research Training Institute (RTI), one of the five approved institutes, is home to the MARC, MBRS and MHSSRA Programs. The RTI extramural collaborators are: NIH, AMHPS, six local colleges and universities, and twenty-six secondary schools. In line with RTI's interest in intellectual capital development, we provide a sampling of this Institute's signal achievements. Data show that the RTI programs have provided the base for minority students to earn 49 M.D. degrees, 9 Ph.D. degrees, 4 DDS degrees, and 15 master's degrees, while 7 have pursued other health related careers.

FLORIDA A&M UNIVERSITY
COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES



The Florida A&M University College of Pharmacy and Pharmaceutical Sciences, established in 1951, is located in Tallahassee, Florida's capital city. The College offers a unique experience for the student interested in a career in the profession of pharmacy and/or pharmaceutical sciences by providing systematic instruction and specialized training in a variety of clinical and research areas. Deemed as a "Center of Excellence," the College is well-known for its record number of African-American and other minority pharmacists as well as Ph.D. graduates throughout the nation.

FAMU'S Professional Pharmacy Degrees include:
Bachelor of Science in Pharmacy (BS Pharmacy)
Doctor of Pharmacy (PharmD)

With Opportunities for Additional Training in:

Pediatrics
Psychiatry
Critical Care Medicine
General Medicine

FAMU's Graduate Pharmaceutical Science Degrees include:

Master of Science (MS)
Doctor of Philosophy (PhD)

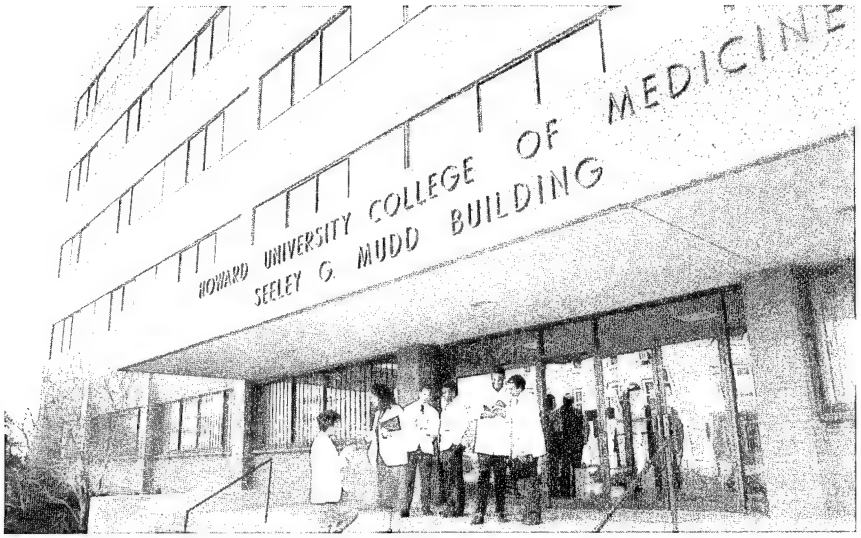
With Opportunities for Specialized Training in:

Pharmacology/Toxicology
Pharmaceutics
Medicinal Chemistry
Environmental Toxicology

Examples of Research FAMU is conducting include:

- the synthesis of potential medicinal agents to treat cancer, AIDS, and arthritis
- the formulation and processing factors that influence drug stability and availability
- drug delivery systems with an emphasis on drug targeting of anticancer agents
- theophylline kinetics in geriatrics

HOWARD UNIVERSITY
COLLEGE OF MEDICINE



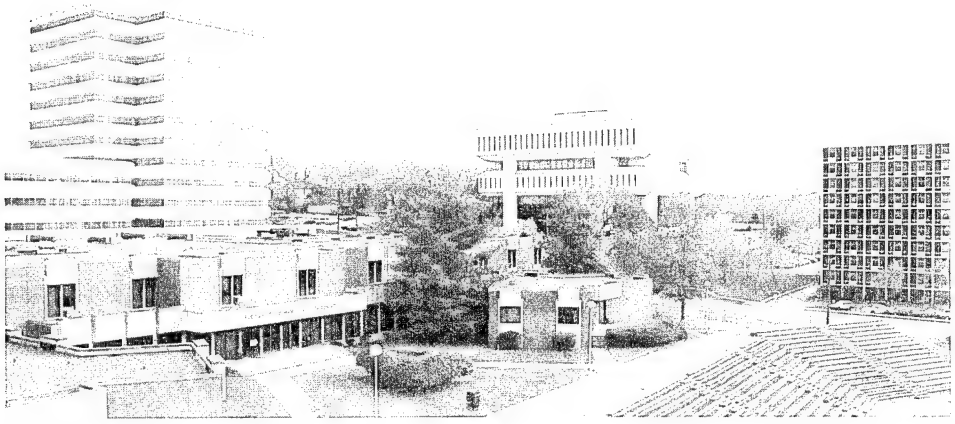
THE COLLEGE OF MEDICINE

The Howard University College of Medicine first opened its doors as a medical department in 1868, just three years after the close of the Civil War. At that time, newly freed Black people were migrating to the nation's capital in large numbers. The founders of the College recognized that the newly overwhelming health care needs of this population and of other Blacks throughout this country would be met best by training students to become highly competent, compassionate physicians who would deliver care in communities having a shortage of health personnel. That realization was translated into the mission of the Howard University College of Medicine, and the continuing fulfillment of the mission is evidenced by the illustrious record of service provided by the College's alumni and faculty. Today, while the College offers excellent research and research training opportunities, the major emphasis remains on preparing students to deliver high quality health care in medically underserved communities.

Key to the preparation are the College's academic programs, which are designed to ensure that (1) every student has the maximum opportunity to perform at his or her best, (2) every graduate has the necessary mastery of basic knowledge and skills to be a competent practitioner and to pass licensure examinations, and (3) every graduate is equipped to pursue whatever further training and career interest he or she selects. Equally important in a student's medical education are the teachers -- those who not only instruct, guide and advise, but also serve as role models. The College of Medicine's faculty, which strives for interpersonal rapport with students, includes physicians and scientists who are nationally and internationally renowned in their fields. Among the most eminent in the faculty's history is Dr. Charles R. Drew, who organized mass storage and distribution of plasma and who directed the Blood for Britain project that supplied plasma to U.S. and British armed forces during World War II.

Students in the College of Medicine have access to a number of medical facilities and other resources within the University and in the Washington metropolitan area. Among the College's preclinical facilities is the Seeley G. Mudd Building, a five-story structure completed in 1979, which contains two large auditoriums, a multidisciplinary laboratory, seminar rooms, and audiovisual and computer-assisted study areas. The 500-bed Howard University Hospital, the College's primary clinical teaching facility, utilizes latest techniques and equipment to provide first-class medical care to patients and an excellent educational environment for students. The hospital houses such facilities as: a completely integrated intraoperative radiation therapy suite -- the first of its kind in the world; a hyperthermia unit; computerized tomography; an echocardiographic laboratory which performs color-flow mapping of the heart; and a Transplant Center, which added liver transplantation to its services in the spring of 1988. The Howard University Cancer Center and the Center for Sickle Cell Disease also contribute to the educational experience by allowing direct contact with current, ongoing clinical and research efforts.

MEHARRY MEDICAL COLLEGE



Founded in 1876, Meharry Medical College is the oldest private institution for the education of Black health professionals in the United States. Nearly forty percent of all Black physicians and dentists currently practicing in the United States are Meharry graduates. Located on a 26-acre campus in Nashville, Meharry includes Schools of Medicine, Dentistry, Graduate Studies and Allied Health Professions.

SCHOOL OF MEDICINE

The School of Medicine offers training to students who wish to become physicians. Most medical students pursue the regular medical curriculum that leads to the M.D. degree. Exceptional applicants to the School of Medicine -identified on the basis of MCAT scores, grade point averages, recommendations and research interests - are recruited as participants in the Medical Scholars Program, a program which complements medical school classes with research experience. A M.D./Ph.D. degree program is offered for students who are interested in careers in academic medicine and research. The Special Medical Program offers an enriched five year curriculum to selected applicants to the M.D. program who may benefit from a less intense pre-clinical curriculum.

SCHOOL OF DENTISTRY

The School of Dentistry offers training leading to the D.D.S. degree. Meharry's dental curriculum offers a comprehensive view of the many opportunities available in the dental profession. Dental students have the opportunity to gain experience in Nutrition, Gerontology and a Hospital Out-patient Based Program which services patients with handicaps.

SCHOOL OF GRADUATE STUDIES

The Graduate School's doctoral program leads to the interdisciplinary Ph.D. in biomedical sciences with major emphases in Biochemistry, Biomedical Sciences, Microbiology, Physiology and Pharmacology. The program furnishes an interdisciplinary core of knowledge which enables graduates to select the most powerful conceptual and methodological tools to solve biomedical problems. A Master of Science in Public Health (M.S.P.H.) program is offered to students in preparation for a career in public health. The graduate school also offers an eight-week summerprogram for dental students as well as summer program for high school and college students interested in research careers.

SCHOOL OF ALLIED HEALTH PROFESSIONS

The School of Allied Health Professions is jointly operated by Meharry Medical College and Tennessee State University. The School offers programs in Dental Hygiene, Health Care Administration, Respiratory Therapy, Speech Pathology and Audiology and Physical Therapy.

MOREHOUSE SCHOOL OF MEDICINE

The Morehouse School of Medicine (MSM) was established in 1975 to meet a national and state need for more primary-care physicians to serve inner city and rural areas where most minorities and poor people live. MSM is the first predominately Black medical institution established in the 20th century.

In less than twenty-one (21) years, Morehouse School of Medicine has reached the stature of an established and highly reputable medical school without the benefit of a major donor or endowment. MSM prides itself on its faculty. Men and women of integrity and intelligence reveal to each Morehouse medical student the many wonders and triumphs of their calling. Faculty members continue to compete successfully for research and training grants from a host of federal and private agencies. The School receives more than twenty-two million dollars annually in such grants.

Initially approved as a two year medical program in 1978, MSM graduated its first four-year class in 1985. A total of three hundred ans seventy-seven (377) graduates have received excellent training at MSM and these efforts have resulted in appointments to residencies at many of the most prestigious and desirable medical institutions in the country.

The Morehouse School of Medicine admits thirty-five (35) students who exhibit those traits of academia, personality and character essential to success in medicine.

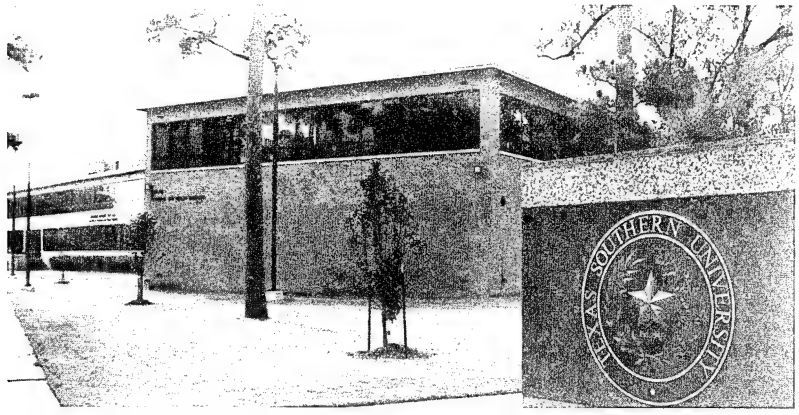
A Ph.D. in Biomedical Sciences program was accredited in September 1991, and admitted its first students in July 1992. The program is interdisciplinary in scope and supports specialization in such fields as Environmental Toxicology, Gastrointestinal Biology, Developmental Biology, Molecular Genetics and Endocrinology.

Students may also pursue a joint M.D./Ph.D. program.

A remarkable series of events have resulted in the development of the Morehouse School of Medicine into an independent institution and the future years present equally challenging tasks and opportunities as we work to become a leader in medical education, research and services. The institution is fully accredited by the Liaison Committee on Medical Education.

MSM is located in Atlanta, Georgia, a metropolitan area of more than two million people and growing. The School is a member of the Atlanta University Center, the world's largest consortium of Black institutions of higher learning.

TEXAS SOUTHERN UNIVERSITY
COLLEGE OF PHARMACY AND HEALTH SCIENCES



Perhaps no other university in the country offers the blend of academic excellence coupled with the vibrancy of a dynamic city. Texas Southern University College of Pharmacy and Health Sciences is located in Houston, Texas, which is the fourth largest city in America. Texas Southern University is the oldest public supported institution of higher education in Houston. Since 1949 the College of Pharmacy and Health Sciences has continued to graduate health care practitioners who are currently serving in community pharmacies, hospitals, industry, academic, professional associations, federal and state agencies. Thirty-one percent (31%) of all American Pharmacists in the country today graduated from Texas Southern University College of Pharmacy and Health Sciences.

ACADEMIC PROGRAMS

The College of Pharmacy and Health Sciences offers the following degrees:

B.S. Environmental Health
B.S. Health Care Administration
B.S. Health Information Management
B.S. Medical Technology
B.S. Pharmacy
B.S. Respiratory Therapy
B.S. Entry Level Pharm. D.
B.S. Post Baccalaureate Pharm. D.

TSU College of Pharmacy and Health Sciences consists of the following divisions:

Division of Pharmacy Practice

Students are offered clinical training in the world renowned Texas Medical Center, the largest in the country. With affiliation agreements at most of the major hospitals and clinics, students have first hand experiences with therapies and techniques before they appear in literature. Degrees offered:

DOCTOR OF PHARMACY (Pharm. D.)
ENTRY LEVEL
POST BACCALAUREATE

The entry level Pharm. D. Program will begin Fall of 1996. Students **will engage in three years of** didactic and laboratory courses. In additional they will be provided experiential training while participating in clerkship and externship rotations.

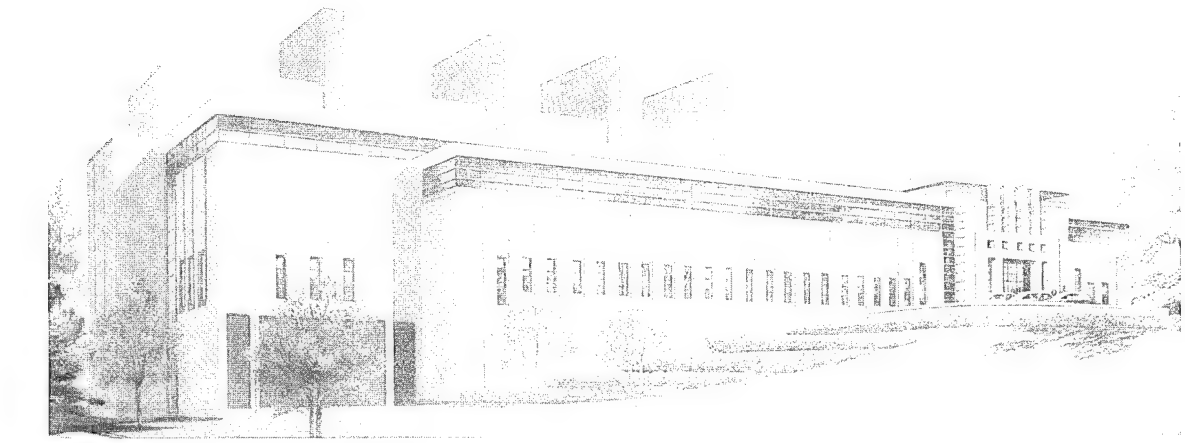
The Post-Baccalaureate Pharm. D. Program is designed for practitioners who wish to update their B.S. Pharmacy Degree to that of the Doctor of Pharmacy (Pharm. D.). The primary objective of the Pharm. D. Program at Texas Southern University is to educate and train graduate pharmacy students to be experts in the detection and therapeutic management of diseases.

Division of Pharmaceutical Sciences

Cutting edge research is conducted by the faculty in the College of Pharmacy Health Sciences. Students have the opportunity to work with faculty researchers that are currently conducting research in hypertension, diabetes, HIV/AIDS and heavy metal toxicology.

Whether your goal is to practice pharmacy or one of the many allied health profession programs we offer, the opportunity awaits you. We invite you to join a team of professionals who have dedicated themselves to the relentless pursuit of perfection.

TUSKEGEE UNIVERSITY SCHOOL OF VETERINARY MEDICINE



A National Resource

The Tuskegee University School of Veterinary Medicine (TUSVM), founded in 1944, is a national resource for the training of minority students. It is the only veterinary school located at a predominantly Black institution in the U.S. Over seventy percent of the nation's Black veterinarians are Tuskegee graduates. The school's alumni, who work in 43 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and in 17 foreign countries, hold leading positions in public health, the military, industry, private practice and academia.

Degree Programs

TUSVM is fully accredited by the Council on Education of the American Veterinary Medical Association. Its four-year Doctor in Veterinary Medicine degree program provides in-depth and thorough biomedical and clinical training related to the treatment, prevention and control of diseases of agricultural, recreational and companion animals. Tuskegee also offers programs leading to the M.S. degree in Veterinary Science or Tropical Animal Health and Production. Students with exceptional academic ability can pursue joint D.V.M.- M.S. degrees.

"A Center of Excellence"

TUSVM's strategic efforts to become a center of excellence in minority veterinary medical education are being supported by major grants for teaching, training and outreach programs. An $8 million award from the U.S. Public Health Service's Bureau of Health Professions recognizes the school's unique role in training minorities to help meet the public health manpower needs of the 21st century. Tuskegee University and the USDA's Cooperative State Research Service jointly provided $9 million for the construction of the Center for Food Animal Production, Research and Service. The 64,000 square foot facility, one of the most modern and mechanically complex buildings on any university campus, is scheduled for occupancy this year. It will provide space for surgical suites and laboratories, and house the Inter-national Center for Tropical Animal Health which coordinates the school's activities in Africa, the Caribbean, and other parts of the globe. (TUSVM is a designated World Health Organization collaborative center for training.) It will also house state-of-the-art computer resources which are managed by the school's Biomedical Information Management system, a unique team of biomedical scientists, education specialists, computer programmers and visualization experts who are setting the pace for computer-assisted education among all U.S. veterinary schools.

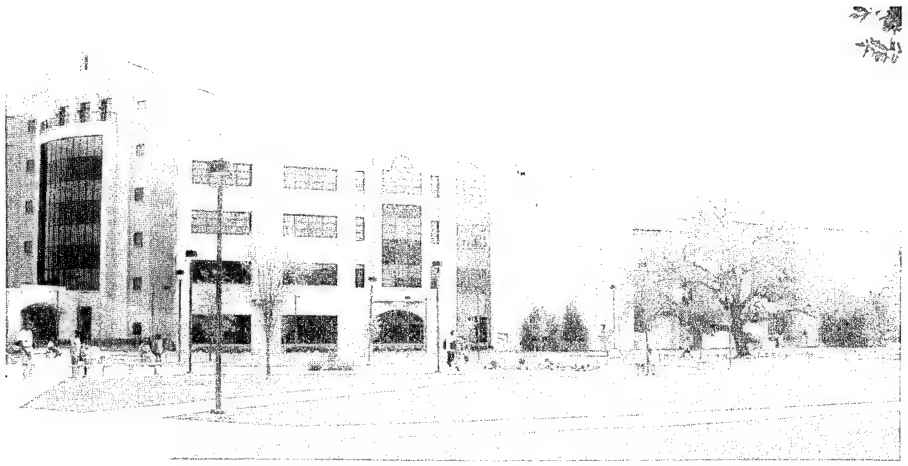
Career Options

Veterinary medicine is a highly rewarding career. Veterinarians can become board certified in one or more specialty areas including surgery, ophthalmology, anesthesiology, pathology, preventive medicine, laboratory animal medicine, clinical pharmacology, microbiology, and internal medicine. Some limit their professional interests to a select species of animals.

Additional Information

Tuskegee University is located 40 miles east of Montgomery, Alabama, and 120 miles west of Atlanta, Georgia, and is the only university campus designated as a national historic site. For additional information, write the Office of Admissions, Tuskegee University School of Veterinary Medicine, Tuskegee, Alabama 36088, or call (205) 727-8309.

XAVIER UNIVERSITY OF LOUISIANA
COLLEGE OF PHARMACY



Xavier University of Louisiana is an urban University of 3,500 students located in the heart of New Orleans and in the midst of the city's other major universities, colleges, medical institutions and central business district. Founded in 1915 by Mother Katherine Drexel and the Sisters of the Blessed Sacrament, Xavier is an Historically Black University with a unique Catholic character.

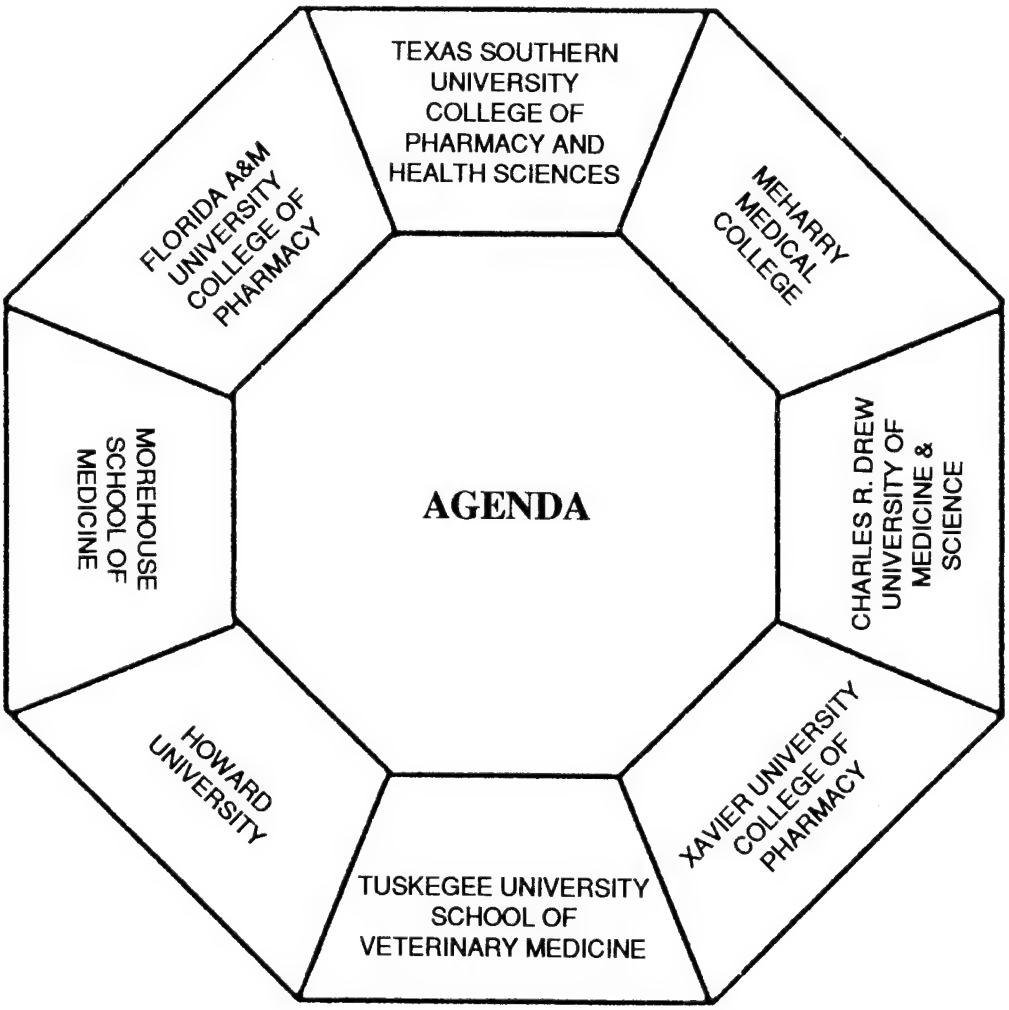
The College of Pharmacy was started in 1927 for the purpose of educating African-Americans and other minority students to become highly trained professionals and leaders in the field of pharmacy.

Academic Programs
Xavier College of Pharmacy offers the entry-level Pharm.D. degree and Post Baccalaureate Pharm.D. degree as its only academic programs. Currently, Xavier College of Pharmacy has approximately 512 students in professional programs.

Entry-Level Pharm.D. Program
During the first three years of the entry-level Doctor of Pharmacy program, students are primarily enrolled in didactic and laboratory courses. In the fourth year, the College uses 54 community pharmacies, 23 hospitals and many other health care facilities to provide experiential training for students participating in required clerkship and externship rotations. In order to provide some of the students with unique experiences providing pharmaceutical services to indigent patients, the College has established pharmacy services in five health clinics located throughout inner city New Orleans.

Post-Baccalaureate Pharm.D. Program
This program is designed for mature motivated practitioners who wish to update their B.S. Pharmacy Degree to that of the Pharm.D. The College of Pharmacy is committed to training pharmacists to meet the rapidly expanding demands by society for pharmaceutical care. Xavier's program provides students with new competencies and skills for clinical practice. The flexible nature of the non-traditional program allows students a variety of learning experiences, examinations, credit for life experiences, evening courses, independent study, videotaped classes and classes by satellite.

Research
Xavier University College of Pharmacy's capability to perform contemporary research has grown tremendously. The College of Pharmacy has acquired numerous state-of-the-art major and minor equipment. The Xavier Institute of Bioenvironmental Toxicology is housed in a new research wing addition to the building which contains 30,000 square feet of research space. Currently, the college has approximately $6.0 million in funded research and related grants and contracts.


AGENDA
TEXAS SOUTHERN UNIVERSITY COLLEGE OF PHARMACY AND HEALTH SCIENCES
MEHARRY MEDICAL COLLEGE
CHARLES R. DREW UNIVERSITY OF MEDICINE & SCIENCE
XAVIER UNIVERSITY COLLEGE OF PHARMACY
TUSKEGEE UNIVERSITY SCHOOL OF VETERINARY MEDICINE
HOWARD UNIVERSITY
MOREHOUSE SCHOOL OF MEDICINE
FLORIDA A&M UNIVERSITY COLLEGE OF PHARMACY

APRIL 3, 1996

OPENING SESSION
7:00 - 9:00 P.M.

Los Angeles Ballroom

Presiding..... Samuel Shacks, M.D., Ph.D.
Associate Professor of Pediatrics
Director, Research Training Institute
Charles R. Drew University of Medicine and Science

Welcome..... Yvonne Braithwaite-Burke, Supervisor
Los Angeles County Board of Supervisors

Henry Lewis, PharmD.
President
Minority Health Professions Foundation

Symposium Overview ..... Rueben Warren, D.D.S., Dr.P.H.
Associate Director
Centers for Disease Control and Prevention

Introduction of Speaker ..... Samuel Shacks, M.D., Ph.D.

Speaker ..... Reed Tuckson, M.D.
President
Charles R. Drew University of Medicine and Science

Announcements .....Walter W. Sullivan, Ph.D.
Symposium Director

RECEPTION
9:15 - 11:00 P.M.
Reflecting Pools

APRIL 4, 1996

FIRST GENERAL SESSION
8:30 - 9:20 A.M.

Los Angeles and Santa Monica Rooms

Contributions of African-Americans to the History of Medicine

Introduction of Speakers ..... Fred Jones, Ph.D.

Speakers ..... Charles Finch, M.D.
Director, International Health Programs
Morehouse School of Medicine

Joseph Harris, M.D.
Associate Professor of Obstetrics and Gynecology
Charles Drew University of Medicine and Science

Concurrent Workshops
9:30 - 11:50 A.M.

LUNCH
11:50 - 1:15 P.M.
Los Angeles and Santa Monica Rooms

Introduction of Speaker ..... Carlton Bailey

Speaker ..... Yvonne Freeman, Ph.D.
Provost and Vice President for Academic Affairs
Clark Atlanta University

Concurrent Workshops
1:30 - 4:40 P.M.

APRIL 5, 1996

SECOND GENERAL SESSION
8:30 - 9:10 A.M.
Los Angeles and Santa Monica Rooms

Introduction of Speaker ..... Samuel Shacks, M.D., Ph.D.

Speaker ..... Kathy Sanders-Phillips, Ph.D.
Charles Drew University of Medicine and Science

THIRD GENERAL SESSION
(GROUPS I-V)
9:20 - 10:00 A.M.
Los Angeles and Santa Monica Rooms

Introduction of Speaker ..... Ricardo Rivers

Speaker ..... Eloy Rodriguez, Ph.D.
James A. Perkins Chair
Cornell University

Concurrent Workshops
9:20 - 11:40 A.M.

LUNCH
11:50 - 1:20 P.M.
Los Angeles and Santa Monica Rooms

Introduction of Speaker ..... James Ferguson, DVM, Ph.D.

Speaker ..... Harold Davis, DVM
Director, Toxicology, AMGEN, Inc.

Concurrent Workshops
1:30 - 3:00 P.M.

CLOSING SESSION

3:10 - 3:50 P.M.

Los Angeles and Santa Monica Rooms

Introduction of Speaker ..... Hycanith Findley, Ph.D.

Speaker ..... Franklyn Prendergast, Ph.D.
Director, Mayo Cancer Center

BANQUET

7:00 - 8:45 P.M.

Los Angeles and Santa Monica Rooms

Introduction of Speaker ..... Henry Lewis, PharmD

Speaker ..... Benjamin Carson, M.D.
Pediatric-Neurosurgeon
Johns-Hopkins University

Awards ..... Walter W. Sullivan, Ph.D.

WORKSHOP SCHEDULE
HIGH SCHOOL (GROUPS I-V)

April 4, 1996

Except for exhibits, each group will meet in the room assigned below.

Group I	**Time**	**Beverly Hills Room**
Workshop A	9:30 A.M.	
Workshop B	10:20 A.M.	
Workshop C	11:10 A.M.	
Workshop D	1:30 P.M.	
Workshop E	2:20 P.M.	
Workshop F	3:10 P.M.	
Exhibits	4:00 P.M.	

Group II	**Time**	**Pacific Palisades Room**
Workshop B	9:30 A.M.	
Workshop C	10:20 A.M.	
Workshop D	11:10 A.M.	
Workshop E	1:30 P.M.	
Workshop F	2:20 P.M.	
Exhibits	3:10 P.M.	
Workshop A	4:00 P.M.	

Group III	**Time**	**Brentwood Room**
Workshop C	9:30 A.M.	
Workshop D	10:20 A.M.	
Workshop E	11:10 A.M.	
Workshop F	1:30 P.M.	
Exhibits	2:20 P.M.	
Workshop A	3:10 P.M.	
Workshop B	4:00 P.M.	

Group IV	Time	Westwood Room
Workshop D	9:30 A.M.	
Workshop E	10:20 A.M.	
Workshop F	11:10 A.M.	
Exhibits	1:30 P.M.	
Workshop A	2:20 P.M.	
Workshop B	3:10 P.M.	
Workshop C	4:00 P.M.	

Group V	Time	Century I Room
Workshop E	9:30 A.M.	
Workshop F	10:20 A.M.	
Exhibits	11:10 A.M.	
Workshop A	1:30 P.M.	
Workshop B	2:20 P.M.	
Workshop C	3:10 P.M.	
Workshop D	4:00 P.M.	

APRIL 5, 1996

Group I	**Time**	**Beverly Hills Room**
Workshop G	10:10 A.M.	
Workshop H	11:00 A.M.	
Workshop I	1:30 P.M.	
Exhibits	2:20 P.M.	

Group II	**Time**	**Pacific Palisades Room**
Workshop H	10:10 A..M.	
Workshop I	11:00 A .M.	
Exhibits	1:30 P.M.	
Workshop G	2:20 P.M.	

Group III	**Time**	**Brentwood Room**
Workshop I	10:10 A.M.	
Exhibits	11:00 A.M.	
Workshop G	1:30 P.M.	
Workshop H	2:20 P.M.	

Group IV	**Time**	**Westwood Room**
Exhibits	10:10 A.M.	
Workshop G	11:00 A.M.	
Workshop H	1:30 P.M.	
Workshop I	2:20 P.M.	

Group V	**Time**	**Century I**
Exhibits	10:10 A.M.	
Workshop H	11:00 A.M.	
Workshop I	1:30 P.M.	
Workshop G	2:20 P.M.	

COLLEGE (GROUPS VI-VII)

APRIL 4, 1996

Group VI	Time	Century II
Workshop B	9:30 A.M.	
Workshop C	10:20 A.M.	
Workshop D	11:10 A.M.	
Workshop E	1:30 P.M.	
Workshop F	2:20 P.M.	
Workshop G	3:10 P.M.	
Exhibits	4:00 P.M.	

Group V	Time	Redwood
Exhibits	9:30 A.M.	
Workshop B	10:20 A.M.	
Workshop C	11:10 A.M.	
Workshop D	1:30 P.M.	
Workshop E	2:20 P.m.	
Workshop F	3:10 P.M.	
Workshop G	4:00 P.M.	

APRIL 5, 1996

Group VI	Time	Century II
Workshop H	9:20 A.M.	
Workshop I	10:10 A.M.	
Workshop J	11:00 A.M.	
Workshop K	1:30 P.M.	
Exhibits	2:20 P.M.	

Group VII	Time
Exhibits	9:20 A.M.
Workshop H	10:10 A.M.
Workshop I	11:00 A.M.
Workshop J	1:30 P.M.
Workshop K	2:20 P.M.

WORKSHOPS

Number	Title
A	**Career Pathways to Biomedical and Public Health Sciences** Moderators: Beverly Lassiter-Brown, M.P.H., PA-C Daphne Calmes, M.D. Ella Kelly, Ed.D. **Speakers** : Carcy Chan, Ph.D. Moses Williams, Ph.D. Carlos Guiterrez, Ph.D.
B	**Careers In Pharmaceutical Sciences** Moderators: Fred Jones, Ph.D. LaJoy Kay Sterling Lloyd **Speakers**: Tyrone Felder, Ph.D. Sandra Burke, Ph.D. Morris Clarke, Ph.D.
C	**Careers In Pharmacy (Academic and Practice)** Moderators: Carlton Bailey Audrey Vaughn Ricardo Rivers **Speakers:** Doris Jackson, Ph.D. John Scriven, Ph.D. Horace Williams, Ph.D.
D	**Careers in Industry** Moderators: Earl Archibold, Ph.D. Allyson Yarbough, Ph.D. Kenneth Phillips, Ph.D. **Speakers:** John Martin, Ph.D. Billy Softly, Ph.D. Bryant Moore, Ph.D.

E **Careers In Veterinary Medicine (Academic and Practice)**

Moderators: Adelah Esfandiai, DVM, Ph.D.
William Murrain, J.D.
Hycanith Findlay, Ph.D.

Speakers: Robert Davis, DVM
Alfred Dorsey, DVM
Clifford Johnson, DVM

F **Careers In Dentistry (Academic and Practice)**

Moderators: Andrea Fox
Phyllis Kennedy
Richard Leathers, D.D.S.

Speakers: Rueben Warren, D.D.S., M.P.H. Dr.P.H.
James Tyus, D.D.S.
Joseph McQuirter, D.D.S.

G **Careers In Medicine (Academic and Practice)**

Moderators: Ernie Smith, M.D.
Richard Baker, M.D.
Keith Norris, M.D.

Speakers: Ezra Davidson, M.D.
Marjorie Smith, M.D.
Ben Muneta, M.D.

H **Scholarships and Fellowships**

Moderators: Vanessa Parker, Ph.D.

Speaker: James Wyche, Ph.D.

I **Careers In Biomedical Research**

Moderators: Daisy Carr, Ph.D.
Susan Bradshaw-Robinson, M.D.
Fred Jones, Ph.D.

Speakers: Morris Clarke, Ph.D.
Consuelo Beck-Sague, Ph.D.
Samuel Shacks, M.D., Ph.D.

J **Careers In Public Health Research**

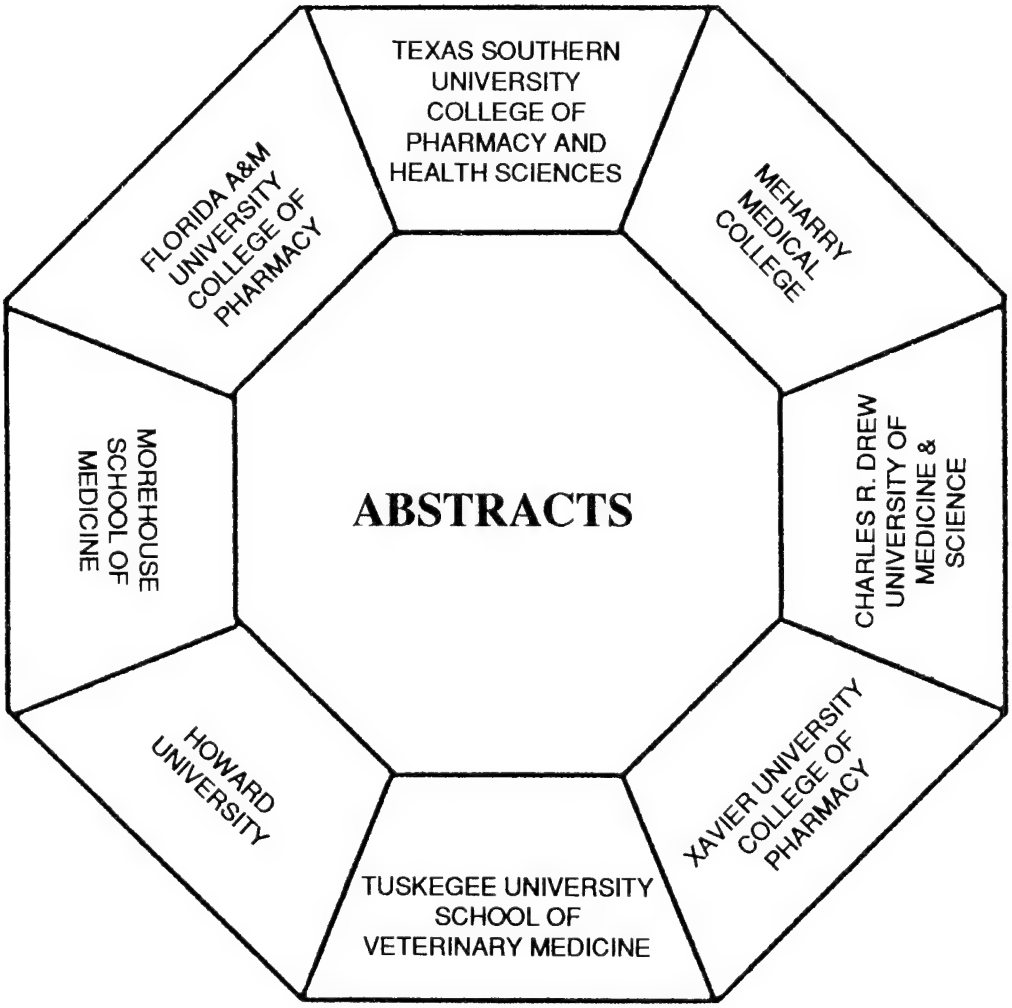
Moderators: Earl Archibold, Ph.D.
C. Perry Brown, Ph.D.
Jocelyn Whitten, Ph.D.

Speakers: Christine Branche-Dorsey, Ph.D.
Minnie Baylor Henry, Esquire
Earl Long, Ph.D.

K **Computers In Biomedical Research**

Moderators: Ricardo Rivers

Speakers: Robert Dottin, Ph.D.
Gary Quigley, Ph.D.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ABSTRACTS

EVIDENCE OF COILED-COIL STRUCTURE OF A SYNTHETIC PEPTIDE DERIVED FROM THE HUMAN IMMUNODEFICIENCY VIRUS GLYCOPROTEIN 41 000. **Craig Brown, L. Gordon, A. Waring. Department of Pediatrics, Charles R. Drew University of Medicine and Science, Los Angeles, CA 90059 and UCLA Center for Molecular and Medical Sciences, Los Angeles, CA 90024.**

Residues 558-595 of the envelope glycoprotein gp41 of human immunodeficiency virus type 1 strain LAI (HIV-1_{LAI}) has been synthetically produced and designated DP-107. Composed of thirty-eight amino acids, DP-107 has been reported as an active inhibitor of virus-mediated cell-cell fusion of blood mononuclear cells by prototypic and primary HIV-1 isolates. It is thought that oligomerization of DP-107 under ambient biological conditions to form a coiled-coil structure is imperative to the process of fusion and therefore the infectability of the virus. Computer modeling along with structural studies have provided evidence of coiled-coil formation. The molecular structure of DP-107 was produced on a Unix™ system using HyperChem®. The synthesis of DP-107 was conducted on a Rink amide 4-methylbenzhydrylamine (MBHA) resin with an ABI 431A peptide synthesizer. The protocol employed was *FastMoc.*™ Structural analysis by Fourier-transform infrared spectrometry (FTIR) in a solvent solution of trifluoroethanol (TFE), phosphate buffered saline (PBS) and water [2:2:1] indicated a high percentage of helical conformation. Further analysis by circular dichroism (CD) in 7 mM PO_4 buffer at various temperatures demonstrated the coiled-coil formation. These studies provide insight to the structure and possibly the role of this region in HIV infection.

IN VITRO EFFECTS OF SICKLE CELL DISEASE SERUM ON NORMAL LYMPHOCYTE RESPONSE TO PHYTOHEMAGGLUTININ. **Colaco. V., Taylor, S.C., Shacks, S.J., Ou, Z.,Charles R. Drew University of Medicine and Science, Los Angeles, California.**

Children with sickle cell disease (SCD) have increased susceptibility to bacterial infections which is suggestive of an immunocompromised state. Multiple humoral and cell mediated immune (CMI) defects have been previously described in SCD.

The purpose of this study was to ascertain if there are any inhibitors of immune response present in SCD serum. Serum was obtained from 33 SCD patients during the steady (healthy) state and frozen at -20° C until utilized in experiments. Peripheral blood lymphocytes separated by density gradient were obtained from 4 healthy normal donors. Standard in vitro phytohemagglutinin (PHA) stimulation of the lymphocytes was done with SCD serum in culture media as compared to normal O+ serum. All cultures were done on microtiter plates with triplicate wells of stimulated and appropriate unstimulated controls. After 72 hours all wells were pulsed with tritiated thymidine for 16 hours and harvested on glass fiber filter paper disks for beta scintillation counting of thymidine incorporation into newly synthesized DNA. Mitogenic responses were expressed as mean counts per minute of triplicate cultures. Results showed suppression of PHA response in 28/33 (85%) of experiments utilizing SCD serum. The degree of suppression ranged from 10-98% as compared to normal O+ serum.

Inhibitors of normal lymphocyte in vitro PHA response appear to be present in a high percentage of SCD patient serums even during the steady state of disease. These inhibitors may have direct effects on SCD lymphocyte CMI function in vivo and perhaps lingering effects in vivo even in the presence of normal O+ serum. Inflammatory cytokines which suppress CMI would seem to be the most likely inhibitory agents.

DEVELOPMENT OF RETINOID CYCLING COMPONENTS IN EMBRYONIC OCTOPUS PHOTORECETORS. **L. Fareed and L.K. Robles, California State University, Dominquez Hills, Carson, CA 90747.**

Purpose. The photopigment proteins opsin and aporetinochrome are synthesized early in development of the embryonic octopus retina. Opsin appears first when the rhabdom domain is established and aporetinochrome appears later when the myeloid bodies are formed in the developing

photoreceptors. We wish to determine when retinoid can be transported into the developing photoreceptor and used to synthesize rhodopsin and retinochrome. **Methods.** Dark or light adapted early and late stage embryos were incubated with [11, 12, ^{3}H(N))]-all trans retinol: BSA for 30 min. And 1 h. The embryos were fixed, the eyes reduced with borane diethylamine (BDMA), lipid extracted and embedded in Araldite. Sections were processed for light microscope auto radiography. Other eyes were homogenized and the extract used for immunoblotting. **Results.** ^{3}H-retinoid was localized in light and dark adapted eyes from early and late stage embryos. In BDMA reduced and lipid extracted dark adapted retinas labeled retinoid was present in the photoreceptor inner segments. Fewer autoradiographic grains were present over the rhabdoms. In light adapted eyes there was a shift in the distribution of label, And grain density increased over the rhabdoms. Immunoblots using anti-retinochrome and anti-opsin demonstrate that opsin and retinochrome are present in the late stage retinas. **Conclusion.**
Based on the distribution and probably synthesize functional rhodopsin and retinochrome molecules. We were surprised that the early stage retinas were able to process retinoid since retinochrome is not present until the middle stages of development. Supported by NIH Grant NIGMS/ MBRS 08156-19.

THE CONFORMATIONS OF A VIRAL FUSION PEPTIDE IN MEMBRANE-MIMIC ENVIRONMENTS, **Flotildes, K.F., Waring, A.J., Gordon, L.M. Charles R. Drew University of Medicine & Science, Los Angeles, CA.**

A series of physical experiments were conducted to determine the structure of the N-terminus of glycoprotein 41,000 (gp41) of the Human Immunodeficiency Virus Type-1 (HIV-1) in model membranes. Previously, paramyxoviruses were found to possess a similar hydrophobic peptide at the N-terminus of an envelope protein. Residue-specific assignments of the N-terminus of HIV-1 gp41, in comparison to that of paramyxoviruses, reveals possible homologous fusions properties. A synthetic peptide corresponding to the N-terminus of HIV-1 gp41 (23 residues; AVGIGALFLGFLGAAGSTMGARS) was prepared using a peptide synthesizer and evaluated through electrospray mass spectrometry (MS) for quality control. Other complementary physical experiments performed to further evaluate the structure of the synthetic peptide include circular dichroism (CD) and Fourier transform infrared (FTIR) spectroscopy measurements. Circular dichroism revealed 65% alpha-helix, 27% beta sheet structure and the remainder as random conformations for the peptide in sodium dodecyl sulfate (SDS), while FTIR showed about 85% alpha helix and no beta sheet structure. The above measurements were performed for the peptide with sodium dodecyl sulfate (SDS), a model system that serves as a 'simulated' biological membrane for experimental purposes. The unique conformations and orientation of the N-terminal may contribute to its fusion properties. Our findings also provide additional information on the similarities that may underlie the fusion peptides of paramyxoviruses and HIV-1 gp41.

SUBMICROSCOPIC DELETIONS OF Y CHROMOSOME LONG ARM ARE NOT UNIQUE TO AZOOSPERMIC MEN, BUT ARE PREVALENT EVEN IN OLIGOZOOSPERMIC MEN. **H. Najmabadi, I. Sinha-Hikim, D.M. DeKrester, H. W. G. Baker, R.I. McLachlan, C. Mallides, K. Loveland, M. Gutierrez, Arlene L. Martinez, F. Ziel, L.G. Ramirez, A.G. Nieva, M. Oh, W. Taylor, S. Arver, S. Bhasin. Charles R. Drew University of Medicine and Science, Los Angeles, CA; Institute of Reproduction and Development, Monash University, Melboume, Australia.**

It is now generally agreed that 10-20% of infertile men with azoospermia have de novo deletions of the Y chromosome long arm (Y1), consistent with the proposed location of the azoospermia locus (AZF) in Yql 1.23. However, it is not known whether Yq microdeletions are unique to men with severe defects of spermatogenesi s (azoospermia), primarily because previous studies were limited to azoospermic men and other infertility phenotypes have not been examined. To examine if infertile men with less severe spermatogenetic defects (oligozoospermia) also have Yq microdeletions, DNA was extracted from blood lymphocytes of 30

OLIGOZOOSPERMIC men (sperm densities less than 5 million/ml) in whom known causes of infertility had been excluded. All subjects were typed for 35 Y-specific STSs that have previously been mapped to deletion interval 6. An STS was considered negative if no PCR product was observed in 3 reactions in which a fertile mate gave a specific PCR product and a normal female did not. No deletions were observed in any of the 16 normal men. None of the 7 females produced a specific PCR product with any of the STSs, thus confirming the Y-specificity of these STSs. Of the 30 oligzoospermic men, 5 had deletions of one or more STSs. Some of these deletions are in a Yq region that does not include the DAZ gene (deleted in azoospermia gene, a Y-specific gene that has been proposed as a candidate gene for male infertility) implicating additional Y-specific genes in the pathogenesis of male infertility. Conclusions: Yq microdeletions are not unique to infertile men with azoospermia; there is a similar prevalence of deletions (approx. 15%) in men with less severe defects of spermatogenesis (oligozoospermia). Presence of deletions outside the DAZ region in some subjects suggests that additional Y-specific genes other than DAZ might be involved in the pathogesis of some subsets of male infertility.

THE EFFECT OF PSYCHOLOGICAL STRESS ON THE CARDIOVASCULAR PHYSIOLOGY OF PREGNANT GUINEA PIGS, Henry Liu, Joann Liu & James Henry, Charles R. Drew University Of Medicine and Science, Los Angeles, CA 90059

Telemetry was used in ten young proven breeder guinea pigs to assess the effect of psychological stress on blood pressure (BP) and heart rate (HR) throughout two consecutive pregnancies. During the first, normal pregnancy, a guinea pig was pair housed with a male. Two to five days after giving birth, the young were taken out and one female and one male were added to establish a new colony. Psychological stressors were imposed about 40 days after setting up this colony. They consisted of ten-days isolation, then five-days of withholding green food followed by a 24hr fast. During the normal pregnancy, the weekly BP & HR declined at mid term by 5mmHg ($P<0.0001$). During stress there was no mid term drop and BP increased by 3-4mmHg ($p<0.0001$). During delivery, the stress BP was 86 mmHg versus 74 mmHg for the normal ($p<0.001$). Kidneys indicated glomeruloendotheliosis and there was a proteinuria of 30-100 mg/dl. These changes are compatible with the development of a preeclamptic state in the stressed animals.

CARDIOVASCULAR FUNCTION DURING PREGNANCY, PARTURITION AND LACTATION IN RATS, Nickie Mainor, Joann Liu & James Henry, Charles R. Drew University of Medicine and Science, Los Angeles, CA 90059.

Eight Long Evans female rats were used to monitor cardiovascular physiological function during normal pregnancy, parturition and lactation: Blood pressure (BP) and heart rate (HR) were recorded by radiotelemetry. The telemetry rat was in a colony with four females and a male for 21 days. Thereafter, it was single housed through parturition at about 23 days and for ten days of lactation. The females were tested for maternal and aggressive behavior on the 7th and 8th lactation days, respectively. On the 9th day the babies were taken out for five hours. Both SBP and DBP remained unchanged the first three weeks, and then dropped sharply two days before parturition by 14 and 10 mmHg ($p<0.001$). Both BP and HR increased during delivery, i.e., from 121 to 125 mmHg. BP remained low during the entire lactation period, i.e., 116 mmHg ($p<0.001$). Maternal aggressive behavior and baby removal tests were associated with increase of the BP and HR ($p<0.001$).

INVIVO TYPE 1 AND 2 CYTOKINE PRODUCTION IN SICKLE CELL DISEASE PATIENTS NG THE STEADY STATE. Wiley, P., Taylor, S.C., Shacks, S.J., Ou, Z., Department of Pediatrics, Charles R. Drew University of Medicine and Science, Los Angeles, CA 90059

Individuals with sickle cell disease (SCD) have a compensated state of ill health or steady state interspersed with periods of acute exacerbation called crises. Crises are commonly infection associated and SCD children may show signs of Immununodeficiency. Serum was obtained from 45 SCD steady state patients aged 6 months to

20 years along with 35 normal healthy age and gender matched controls. Human gamma interferon (IFN), tumor necrosis factor (TNF) alpha, interleukins (IL), 1, 2, 4, 6, 1 0 and 12 serum levels were measured utilizing ELISA kits (Endogen, Cambridge, MA and R&D Systems, Minneapolls, MN. The bound cytokines were quantitated by enzymatic reaction resulting in detectable color change, using the Titertek Multiskan ELISA reader (Flow Laboratories Inc. McLean, VA). Concentrations of serum samples were determined by referring to the standard curve and results expressed as pg/ml. Results revealed no detectable levels of IL-1, IL-2 and IL-12 in either SCD or controls. Gamma IFN levels were detectable in 5/30 (17%) of SCD subjects (range 6 -18 pg/ml) and 5/19 (26%) of controls (range 5-20 pg/ml). Significant levels of IL-4 were found in 6/45 (13%) of SCD patients and 1/31 (3%) of controls. Detectable serum levels of IL6 were present in 35/45 (78%) of SCD patients (range 6-268 pg/ml) and 12/29 (41%) of controls (range 691 pg/ml). However, the geometric mean titer (GMT)in SCD (22 +/-4) was significantly higher than the controls (8 +/-2). IL-10 was detectable in 24/32 (75%) of SCD subjects and 7/25 (28%) of controls. Strikingly, 13/32 (41%) of SCD patients had elevated IL-10 levels as compared to only 1/25 (4"/o) controls. TNF alpha senun levels were abnormal in 5/33 (15%) of SCD patients and none of the 27 controls. The impact of high circulating levels of IL-6 and IL- I 0, which are both type 2 cytokines, may be deleterious to both humoral and cell mediated immune functions in SCD, with resultant increased risk of morbidity.

INTERACTIONS BETWEEN ANTI-HIV NUCLEOSIDES AT THE RENAL LEVEL. **Moore, Angel, Enigbokan, M. A., Thompson, J. O., and Amuemeke, D. C. College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX 77004.**

A combination chemotherapeutic regimen that has been shown to be beneficial in the management of acquired immunodeficiency syndrome (AIDS) involves the use of 2',3' -dideoxycytidine (ddC) and 3' - azidothymidine (AZT) administered concurrently. Since the toxicity of many chemotherapiutic nucleosides (CN) is a function of their plasma concentration is usually affected by the rate of renal elimination, we decided to investigate the impact of AZT on the renal clearance of ddC. Renal plasma clearance (CL) determinations were made in CF-1 male mice by administering ^{3}H-ddC (2 μCi/mouse ^{14}C-inulin (1 μCi/mouse) subcutaneously. Urine was collected in situ via urethral ligation. The product of the urine flow rate and the urine concentration of the drug was divided by the plasma concentration of the drug. The clearance of ddC relative to that inulin (Cl_{ddc} Cl_{inu}) was 1.77 ± 0.21, which is suggestive of ddC secretion into renal tubules. In the presence of AZT 100 mg/kg Cl_{ddc} Cl_{inu} was 4.03 ± 0.95 but preexposure of mice to 200mg/kg cimetidine, a specific inhibitor of the renal organic cation carrier, resulted in a Cl_{ddc} Cl_{inu} of 0.63 ± 0.15. These data suggest that AZT enhances the renal secretion of ddC (which may thereby reduce ddC toxicity) and that ddC renal excretion utilizes the organic cation carrier.

*Supported by grants #S06GM08061 - 16A3 and A129360-03S1.

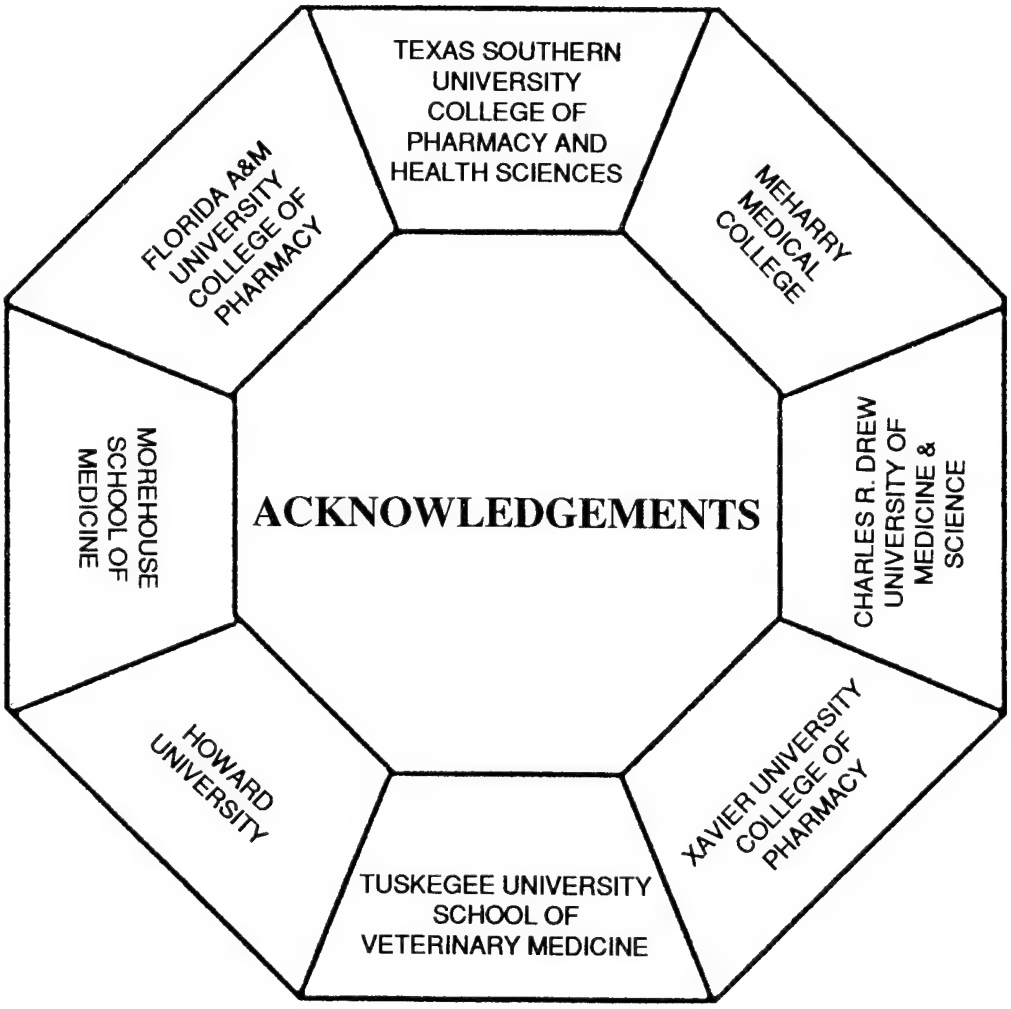
THE EFFECTS OF ENDOTHELIAL CELL (EC) CONDITIONED MEDIA ON SMOOTH MUSCLE CELL (SMC) PROLIFERATION AND MIGRATION. **LaKesha Y. Lawrence, Ricardo A. Rivers, and Sandra Harris-Hooker, Ph.D. Morehouse School of Medicine, Atlanta, GA, 30310.**

Vascular remodeling can occur in a number of clinical disorders. The remodeling process is the result of a complex set of events resulting in endothelial dysfunction and intimal/medial thickening. In our laboratory, detailed investigations are ongoing to understand the mediators and modulators involved in the process of developing major vascular disorders such as atherosclerosis, hypertensive disease,

restenosis, and others. The objective of these studies is to understand the interactions promoting smooth muscle cell (SMC) migration and proliferation, and increased connective tissue components that result in medial and intimal thickening. Recent studies in our laboratory have shown that injured endothelial cell cultures produce both mitogens and growth inhibitors that affect the proliferation and/or migration of SMC in vitro. Conditioned media (CM) collected from injured EC cultures and subsequently added to SMC cultures produced increased proliferative and migratory effects of SMC. Cells plated at a certain seeding density, blocked by serum depletion and incorporated with CM at 25% and 50% of original strength, have had an increased proliferation rate of 30% and 84%, respectively. Confluent cultures of SMC, following a denudation injury and incubation in 50% CM, experienced greater motility and migratory effects compared to cells cultured in control medium. The present research suggests that EC released factors have a positive effect in increasing SMC proliferation and migration, in vitro and possibly, in vivo. This research could lead to advances in the treatment of cardiovascular diseases.
Supported by NIH Grant S06GM08248 to Morehouse School of Medicine.

Characterization of the Unique *pepN* Allele Present in the Latin American Clone of *Vibrio cholera* 01. **Juliet M. Small and Patricia I. Fields. Texas Southern University, College of Pharmacy and Health Sciences, Houston, TX and Centers for Disease Control and Prevention, Atlanta, GA.**

Epidemic cholera was first observed in Peru in 1991 and rapidly disseminated throughout the remainder of Central and South America. Multilocus enzyme eletrophoresis (MEE) separates the Latin American isolates from other groups of *Vibrio cholerae* 01. MEE data indicate that the Latin American isolates are clonal and are distinct from seventh pandemic isolates. The Latin American clone differs form other seventh pandemic isolates by one enzyme, peptidase N (PepN) also referred to as leucine aminopeptidase. Analysis of the three pepN alleles found in *V. cholerae* 01, represented by the Latin American, seventh pandemic, and US Gulf Coast isolates, revealed significant sequence divergent at the 5-prime end of the gene in the Latin American allele. Molecular techniques were employed in a study that sought to define the characteristics of the divergent sequence. Genomic DNA restriction endonuclease digestion experiments were conducted with restriction enzymes *SacII, ClaI, HindIII,* and *EcoRv.* Restriction fragments were blottted onto a nylon membrane and probed with digoxigenin-11-dUTP -labeled probes. This study utilized probes to the 5-prime end and the 5-prime flanking sequence of both the Latin American and seventh pandemic *pepN* allels. Probes of but hybridized to DNA restriction fragments were detected bychemiluminescence with an alkaline phosphatase-labeled anti-digoxigenin Fab fragment. Molecular weight differences between fragments containing the *pepN* allele of the seventh pandemic and Latin American isolates suggest that an insertion of approximately 16 kb into the seventh pandemic *pepN* resulted in a new allele, the Latin American *pepN*. The results indicate that the Latin American clone is probably a variant of the seventh pademic as it continues to possess the 5-prime gene sequesces of the seventh pandemic *pepN* unstream of the Latin American allele.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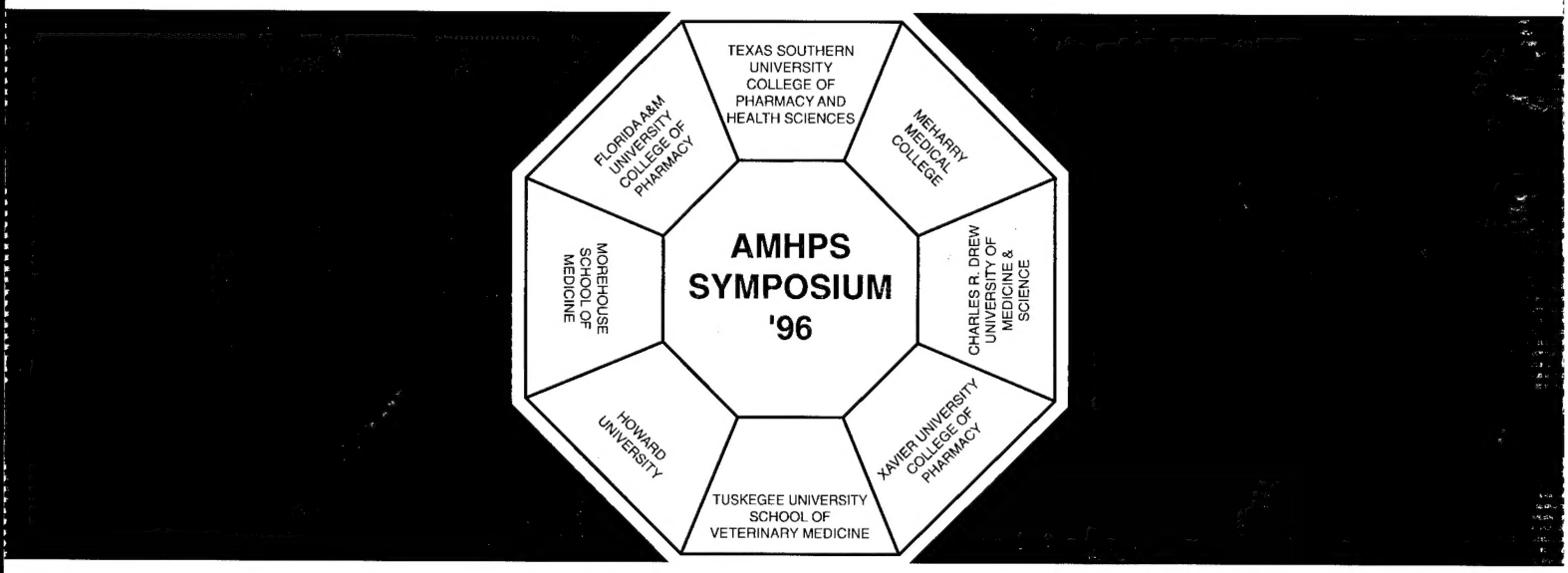

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